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ABSTRACT

The alternative teacher certification procedures and professional development opportunities available to secondary academic and career and technical education (CTE) teachers were examined. The main data collection activities were as follows: (1) a literature review; (2) analysis of data on alternative teacher certification procedures in 36 states; (3) survey of 2,091 CTE teachers in 28 states; and (4) interviews with 14 survey respondents. Of the 632 survey respondents, 59% had completed all their teacher certification requirements when they began teaching. More than half of the agriculture, health careers, and trade and industrial teachers reported that they had not completed all their teacher certification requirements by the time they began teaching. Many of the new teachers reported needing ongoing help with curriculum, teaching methods, classroom management, and personal support. They also valued the availability of classroom observation opportunities and workshops and release time to take advantage of them. The study recommendations included calls for further research to examine the relationship between traditional versus alternative teacher certification and student achievement, and to identify the relative impacts of traditional and alternative certification on CTE teachers'

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success. (Twenty-seven tables are included. The bibliography lists 39 references. The various survey instruments and tables detailing the responses to them are presented in 16 appendixes.) (MN)

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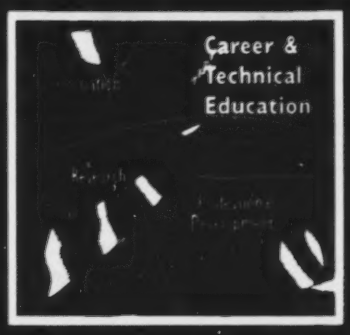

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ALTERNATIVE TEACHER CERTIFICATION PROCEDURES and PROFESSIONAL DEVELOPMENT OPPORTUNITIES for CAREER and TECHNICAL EDUCATION TEACHERS

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Alternative Teacher Certification Procedures and Professional Development Opportunities for Career and Technical Education Teachers

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Sheila K. Ruhland, Project Director

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EXECUTIVE SUMMARY

This study examines alternative teacher certification procedures and professional development opportunities available to secondary academic and career and technical education (CTE) teachers, and describes the teaching experiences and professional development needs of recently certified CTE teachers. On a national level, there is an increase in the number of states providing alternative certification routes differing from the traditional college teacher preparation program (Feistritzer & Chester, 2001). This increase in alternative certification routes raises concerns as to the quality of teachers entering the teaching profession. Thus, there may be a greater need to provide professional development opportunities that support new teachers and encourage them to continue in the teaching profession.

Often the terms *licensure* and *certification* are used interchangeably. In this study, certification is used broadly to refer to the entire range of procedures and practices used to award credentials (licenses and certificates) that allow individuals to serve as public school teachers. *Alternative teacher certification* refers to non-traditional routes into the teaching profession.

A review of literature was conducted to give insight into the types of teacher certification practices in the United States. Some critics have argued that alternatively certified teachers are inferior to traditionally certified teachers; others claim alternative certification routes will attract more candidates to the teaching profession. Retention of alternatively certified teachers is also a matter of concern. The review of literature provides an overview of retention strategies for both traditional and alternatively certified teachers.

In addition to the review of literature pertinent to the need for alternative certification, data were collected to determine alternative teacher certification procedures and to identify professional development opportunities provided by states. Data were collected from state departments of education and CTE teachers through surveys. Telephone interviews were also conducted with CTE teachers. The comments from the telephone interviews provided additional insights into the varied teaching experiences and professional development needs of recently certified CTE teachers.

Thirty-six states provided data on alternative teacher certification procedures for academic and CTE teachers. The review of academic and professional development backgrounds and transcript analysis was the most common alternative teacher certification procedure reported by state departments of education for academic teachers and six of the eight CTE certification areas. No differences in alternative teacher certification procedures were reported between secondary academic and CTE teachers. Thirty-three states reported professional development activities available to recently certified secondary academic and CTE teachers. A mentor (67%) was the most common professional development activity provided, followed by professional development workshops (61%).

The survey population for this study consisted of traditionally and alternatively certified CTE teachers hired between 1996 and 2000 from the 50 states and the District of Columbia. Twenty-eight states (55%) were able to provide the names and addresses of traditionally and

alternatively certified CTE teachers hired between 1996 and 2000. Surveys were sent to 2,091 CTE teachers, and completed surveys were received from 632.

The majority of respondents (59%) had completed all the teacher certification requirements when they began teaching. Of these respondents, 47% completed a baccalaureate degree in education, 28% completed an alternative certification program, and 18% completed a fifth-year or post-baccalaureate program. More than half of the agriculture (58%), health careers (65%), and trade and industrial (59%) teachers reported that at the time they began teaching, they had not completed all the teacher certification requirements.

CTE teachers with a baccalaureate degree in education, fifth-year or post-baccalaureate program, or alternative certification program reported significant differences in pre-service preparation in pedagogy and knowledge of subject matter. In pedagogy, teachers with a baccalaureate degree in education felt the most prepared, and alternatively certified teachers felt the least prepared. However, alternatively certified teachers felt most prepared in knowledge of subject matter. No differences were reported between types of certification program in the areas of classroom management skills and working with special populations. Teachers who reported using support services rated their teaching experience more positively than those who did not. Eight support services were listed and included use of curriculum and instructional resources, orientation to policies and procedures, paid curriculum development time prior to teaching, and peer support group.

The likelihood of remaining in the teaching profession was linked to positive ratings of teaching experience. Sixty-three percent of the CTE respondents rated their teaching experience as very positive or extremely positive. The type of teacher certification program did not influence the reported likelihood of remaining in the teaching profession, nor their decision to continue teaching. Fifty-three percent of the respondents reported they planned to continue teaching as a long-term career (eight or more years).

Fourteen survey respondents participated in telephone interviews. Depending on their pre-service preparation, some new teachers reported the need for ongoing help with curriculum, teaching methods, and classroom management. The need for personal support, whether in the form of a mentor or a peer support group, was clear in the comments of all new teachers. This support from other education professionals was seen as key to staying in the teaching profession, though there was no consensus on what would be most helpful. Beginning teachers also valued the availability of classroom observation opportunities and workshops on many topics, along with the release time available to take advantage of these.

Based upon the findings from this study, recommendations for further research are offered:

1. an examination of the relationship between traditional versus alternative teacher certification and student achievement,

2. an examination of the relationship between mentor and the quality of the mentor program with beginning teachers,

3. the identification of model CTE traditional and alternative teacher preparation programs,

4. the effectiveness of national programs offering alternative certification routes into the teaching profession,

5. the identification of pre-service and in-service needs of CTE teachers, and

6. a longitudinal study to compare the likelihood of success in terms of traditionally and alternatively certified CTE teachers with varying levels of preparation.

Several appendixes are provided summarizing state departments of education reports of alternative teacher certification procedures, and professional development opportunities. Survey responses by overall CTE certification and individual CTE certification areas (agriculture, business, computer science, family and consumer science, health, marketing, technology, and trade and industrial) are also reported in appendixes IX through XVI.

INTRODUCTION

Purpose of this Study

On a national level, there is an increase in the number of states providing alternative certification routes for both secondary academic and career and technical education (CTE) teachers (Feistritzer & Chester, 2001). Alternative certification routes are providing new opportunities to attract candidates to the teaching profession. The purpose of this study was to examine alternative teacher certification procedures and professional development opportunities available to secondary academic and CTE teachers, and to describe recently certified CTE teachers' teaching experiences and how they vary based upon the type of teacher certification program. Traditional and alternative teacher certification routes are described in this study.

Research Questions

The research questions for this study were

1. What are the similarities and differences between alternative teacher certification procedures for secondary academic teachers and CTE teachers?

2. Are there differences in the professional development opportunities available to recently certified secondary academic teachers and CTE teachers?

3 Are differences reported among CTE teachers grouped according to teacher certification program in their ratings of pre-service preparation?

4. Are differences reported among CTE teachers grouped according to their ratings of teaching experience and their ratings of support services used?

5. Are differences reported among CTE teachers grouped according to their ratings of teaching experience and their reported likelihood to continue in the teaching profession?

6. Are differences reported among CTE teachers grouped according to teacher certification program in their likelihood to continue in the teaching profession?

7. What are the professional development needs of recently certified CTE teachers?

Conceptual Framework

In previous years, individuals entered a teacher education program at a college or university, completed a student teaching requirement during their senior year, and started teaching at the age of 22 or 23. Teachers were hired upon completion of a baccalaureate degree from an approved teacher education program.

Recently, states have increased the availability of alternative teacher preparation routes in order to attract more applicants. "Nearly all states--45 out of 50--now offer some type of

alternative to going back to college and majoring in education in order to become a teacher. This compares with 40 states in 2000 and only eight in 1983" (National Center for Education Information, 2002, para. 6). Traditional certification routes include a baccalaureate degree in education or a fifth-year or post-baccalaureate program. Alternative certification routes are non-traditional routes designed for individuals who have not completed a baccalaureate degree in education. The individuals are often certified based upon work experience, completion of coursework, or completion of a baccalaureate degree in the subject area they were hired to teach.

The alternative teacher preparation route may take as few as 3 months or as many as 3 years to complete. Some state agencies have developed summer programs, delivered by a college or university teacher education department, to initially prepare teachers who have been hired in a school district for the fall term. These summer programs are designed to assist the alternatively certified teachers with pedagogy and knowledge of the subject matter prior to entering the classroom. States typically provide a 3 year timeline to move from a provisional or temporary license (issued for alternatively certified teachers) to a permanent license that is renewed every 3 to 5 years.

Once teachers are hired, they may enter an induction (beginning professional development) period. This period varies, depending on the needs of the individual or the type of certification completed. Some states mandate professional development activities, while other states provide little or no support, leaving any professional development activities to local school districts. Depending upon the type of professional development activities provided, the time required for a teacher to achieve teaching competence will vary.

After teachers obtain a permanent license, they continue to participate in professional development activities. The choice to participate in any future activities may be based upon their own professional goals or requirements to renew their permanent license. Participation in continuing professional development is ongoing until retirement. Regardless of the teacher certification route (i.e., traditional or alternative), the phases of pre-service, induction, and continuing professional development are important to achieving and maintaining teaching competence. For the purpose of this study, *pre-service* is defined as the training or instruction that takes place before an individual begins a job or task (LingualLinks Library, n.d.).

Background

In recent years, teacher licensure and teacher certification have been important agenda items for most state legislatures. States are enacting laws to regulate teacher education programs, requiring higher education institutions to be more accountable, and making changes in the credentialing and re-certification of teachers. Lewis (1991) referred to this as the "politicization of teaching" (p. 26), in which public influence on teacher education continues to be on the increase.

Concerns about teacher preparation and qualifications have gained greater visibility because of growing interest in education reform during a time of teacher shortages. Driving these changes is a growing sense that the traditional methods of preparing teachers, developed

during the first half of the twentieth century, have not worked as well as they should have (Fraser, 2001). This resulted in increasing support for alternative routes to teacher certification.

Alternative teacher certification is a term that has been generally used to refer to non-traditional routes into the teaching profession. "In each of the last three years, approximately 25,000 teachers were certified through alternative routes" (National Center for Education Information, 2002, para. 4). According to Feistritzer and Chester (2000):

> The term "alternative teacher certification" has been used to refer to every avenue to becoming licensed to teach, from emergency certification to very sophisticated and well-designed programs that address the professional preparation needs of the growing population of individuals who already have at least a baccalaureate degree and considerable life experience and want to become teachers. (p. 3)

In the above description, Feistritzer and Chester use *certification* to refer to the process by which a teacher becomes alternatively certified. This study follows Feistritzer and Chester's usage of the term. Because the terms *licensure* and *certification* are often used interchangeably, the term certification is used broadly in the present study to refer to the entire range of procedures and practices used to award credentials (licenses and certificates) enabling individuals to serve as public school teachers.

Traditional Certification Practices

In order to become licensed through a traditional route, teachers may need to pass standardized tests, have a minimum grade point average, and complete degree requirements from an accredited college or university offering teacher training. According to Lilly (1992):

> In most states the function of initial licensure has effectively been turned over to colleges and universities who submit their teacher education programs to the state for review and approval, and once approved, submit the names of program graduates to the state for virtually automatic issuance of the teaching license. (p. 149)

Increasing interest in assuring teacher accountability has resulted in the expansion of activity on the part of national organizations with an interest in teacher education. These organizations include the American Association of Colleges for Teacher Education (AACTE), the Interstate New Teacher Assessment and Support Consortium (INTASC), the National Board for Professional Teaching Standards (NBPTS), and the National Council for Accreditation of Teacher Education (NCATE). Each of these organizations has developed recommendations aimed at assuring teacher competency, and each has a particular audience and purpose.

State agencies have the authority to approve teacher preparation programs offered at colleges and universities. These programs are the traditional means of providing the knowledge base needed by teachers. NCATE is an independent accrediting agency for school, colleges, and departments of education. According to NCATE (2001).

Accredited schools, colleges, and departments of education should

1. ensure that new teachers attain the necessary content, pedagogical, and professional knowledge and skills to teach both independently and collaboratively;

2. ensure that all new administrators and other professional specialists attain the knowledge and skills to create an environment for student learning;

3. administer multiple assessments in a variety of forms, engage in follow-up studies, and use results to determine whether candidates meet professional standards, and whether graduates can teach so that students learn;

4. commit to preparing teachers for a diverse community of students;

5. prepare candidates who can integrate technology into instruction to enhance student learning;

6. encourage collegiality, reflective practice, continuous improvement, and collaboration among educators, learners, and families; and

7. view teacher preparation and development as a continuum, moving from pre-service preparation to supervised beginning practice to continuing professional development. (pp. 3-4)

The NCATE accreditation process aims to ensure that teacher education graduates have the knowledge, skills, and dispositions to help students learn. In May 2000, the NCATE Standards Committee ratified new standards emphasizing accountability. The standards are divided into two sections: (a) candidate performance (Standards 1 and 2), and (b) unit capacity (Standards 3 through 6). The NCATE (2001) six unit standards are as follows:

Standard 1. Candidate knowledge, skills, and dispositions.
Standard 2. Assessment system and unit evaluation.
Standard 3. Field experience and clinical practice.
Standard 4. Diversity.
Standard 5. Faculty qualifications, performance, and development.
Standard 6. Unit governance and resources. (pp. 10-11)

Alternative Certification Practices

Generally, *alternative certification* is the term applied to policies and programs designed to certify teachers who have not completed an undergraduate degree in the field of education. Individuals who enter teaching through an alternative route may earn certification more quickly than they could by going through a traditional undergraduate teacher education program. The definition of alternative certification varies among the states.

Alternative certification encompasses a wide range of practices, ranging from emergency certification given to those with no teaching background or training, to programs designed to license or certify individuals who have an undergraduate degree in the field in which they plan to teach. Feistritzer and Chester (2001) cited recent changes in college and university teacher education programs.

> Two-thirds (65 percent) of institutions surveyed by the NCEI [National Center for Education Information] indicated they have at least one program for the preparation of teachers in which candidates enter at the Post-baccalaureate level. More than half (55 percent) of the individuals who were admitted into Teacher Preparation Programs at the Post-baccalaureate level within the last year were transitioning into teaching from an occupation outside the field of education. (p. 4)

The design and range of fifth-year and post-baccalaureate programs was described by Hofer (1997):

> Teacher training also exists at the graduate level, where there are 2 major categories of program: 5-year integrated or extended programs and post-baccalaureate programs. In the integrated or extended programs, students usually pursue a major in a field other than education and are gradually introduced to the education profession through coursework and field experiences. The fifth (and sometimes sixth) year involves concentrated professional preparation. Models vary widely, with some 5-year programs offering both a bachelor's and a master's degree (M.Ed. or M.A.T.), and others offering a bachelor's degree and graduate credit hours. In post-baccalaureate programs, students who already have bachelor's degrees in subject areas receive a year or more of professional preparation for teaching. Graduates may receive an M.Ed. or M.A.T, or graduate credits but no degree, or may simply be eligible for teacher certification as a result of the training. (para. 3)

These fifth-year and post-baccalaureate programs, while classified as alternative by Feistritzer and Chester (2000), share many characteristics with traditional teacher certification programs. Some teacher education institutions, preferring such programs to the traditional four-year programs, have replaced traditional teacher education programs with fifth-year or post-baccalaureate programs.

Alternative certification classes. Nationwide, Feistritzer and Chester (2000) identified 10 classes they use to categorize the alternative teacher certification policies of states. Nine of the classes represent categories of alternative certification available to individuals entering the teaching profession for the first time; the remaining category (Class I) is used by states having no alternative certification routes. Following are the 10 classes identified by Feistritzer and Chester (2000):

1. Class A is a program designed for the explicit purpose of attracting talented individuals who already have a bachelor's degree in a field other than education into

elementary or secondary school teaching. The program is not restricted to shortages, secondary grade levels or subject area. Alternative teacher certification programs in these states involve teaching with a trained mentor, and formal instruction that deals with the theory and practice of teaching during the school year—and sometimes the summer before and/or after.

2. Class B is a teacher certification route that has been designed specifically to bring talented individuals into teaching who have at least a bachelor's degree in teaching. These programs involve specially designed mentoring and formal instruction. However, these states either restrict the program to shortages and/or secondary grade levels and/or subject areas.

3. Class C entails a review of academic and professional background, transcript analysis. They involve specially (individually) designed in-service training and course-taking necessary to reach competencies required for certification, if applicable. The state and/or local school district have major responsibility for program design.

4. Class D entails a review of academic and professional background, transcript analysis. They involve specially (individually) designed in-service training and course-taking necessary to reach competencies required for certification, if applicable. An institution of higher education has major responsibility for program design.

5. Class E is post-baccalaureate programs based at an institution of higher education.

6. Class F is basically an emergency route. The prospective teacher is issued some type of emergency certificate or waiver which allows the individual to teach, usually without any on-site support or supervision, while taking the traditional teacher education courses requisite for full certification.

7. Class G are programs for persons who have few requirements left to fulfill before becoming certified through the traditional approved college teacher education program route, e.g., persons certified in one state moving to another, or persons certified in one endorsement area seeking to become certified in another.

8. Class H is a route that enables a person who has some "special" qualifications, such as a well-known author or Nobel Prize winner, to teach certain subjects.

9. Class I provides no alternatives to the approved college teacher education program route for licensing teachers.

10. Class J is designed to eliminate emergency routes. They prepare individuals who don't meet basic requirements to become qualified to enter an alternate or traditional route leading to teacher licensing. (p. 41)

By 2001, 45 states plus the District of Columbia reported implementing alternatives to the traditional college teacher education program route for licensing teachers (Feistritzer & Chester, 2001). These programs vary in their initial requirements.

Noell (1998) defines a state waiver (Class F in Feistritzer & Chester, 2000) as "relaxation of state teacher certification or licensure requirements that is generally temporary and most often not renewed" (p. 313). A list of states granting teacher waivers in CTE certification areas is provided in Table 1. In some states, the number of teachers with waivers is reported, but the total number of teachers was not available. In those cases, percentages are not provided. Appendix I summarizes, by state, teacher certification and teacher licensure requirements and each state's waiver categories. Forty-five states reported some waiver data using their respective state definitions.

Secondary Career and Technical Education Teacher Certification

CTE has not escaped the issues and challenges confronting teacher education described above. The processes used to certify CTE teachers have their roots in the 1917 Smith-Hughes Act. "The Smith-Hughes Act specifically stated that instructors who were to teach in federally funded vocational education programs must have had work experience in the specific occupational area" (Erekson & Barr, 1985, p. 16). Teachers in trade and industrial education and health fields were typically certified on the basis of their occupational experience, and were required to complete a minimal number of course hours in pedagogy. Other CTE teachers (e.g., agricultural, family and consumer science, business, and marketing) were expected to have completed baccalaureate degrees in a related subject area, along with professional education course work.

Table 1

Teacher Waivers by Career and Technical Education Certification Area

State	Agriculture		Business		Home Economics		Technology	
	n	%	*n*	%	*n*	%	*n*	%
Alabama	10	31	46	9			3	75
Connecticut					2	0.4	6	1
Florida	22	7					164	18
Georgia	3	NR			13	2	19	3
Hawaii	3	NR	6	NR	6	NR		
Indiana	6	NR	1	NR	21	NR	13	NR
Iowa[a]	1	NR	15	NR	4	NR	15	NR
Michigan					5	NR		
Missouri[b]	17	NR	32	NR	24	NR	16	NR
New Mexico	6	6	4	NR				
New York	35	19	311	11	229	18	487	26
North Carolina			2	15				
North Dakota			2	0.6			2	2
Rhode Island			1	0.5	2	NR	1	NR
South Dakota	3	5	4	4	6	5	8	7

Washington			2	NR
Wyoming	2	0.5		

Note. Percentage is the total number of teachers in the state with waivers. NR = Data not reported. From "*The Initial Report of the Secretary on the Quality of Teacher Preparation,*" by J. Noell, 1998, pp. 282–306. Adapted with permission of the author.

[a]Iowa does not issue waivers; numbers are for a conditional license. [b]Missouri does not grant waivers; data are for provisional certification and those teachers seeking additional certification.

Lynch (1997) notes that states vary in the designs and models available to those seeking teaching licensure or certification:

> Nearly all states [still] certify a considerable portion of their vocational education teaching force without benefit of professional education. Minimal requirements range from a high school diploma equivalent (i.e., completion of a GED) and occupational experience, to completion of some preservice and inservice workshops, to a master's degree (i.e., in some states and some subjects). (p. 13)

As noted, CTE has a long tradition of using non-traditional certification to provide teaching credentials to individuals with experience in the trades, industry, and technology. In 1994, more than 45% of secondary trade and industrial education teachers did not have bachelor's degrees (Lynch, 1996). Lynch reports that "virtually every state permits an alternative certification or credentialing program for some teachers in vocational and technical education. The primary alternative is to substitute years of occupational experience for higher levels of formal education" (p. 23). The National Center for Education Statistics (1998) reported that 50% of vocational education teachers were not fully certified in the class subject they taught during the 1993-94 school year. Of these teachers, 44% did not have a major or minor in the subject area they were teaching. Secondary academic teachers, by contrast:

> In school year 1993-94, 15 to 32 percent of public secondary students and 11 to 36 percent of private secondary students were taught the core subjects by teachers who did not major in that subject at the undergraduate or graduate level. (p. 168)

While non-traditional certification of many CTE teachers has continued over the years, some have suggested changes in this system. Boesel and McFarland (1994), in the *National Assessment of Vocational Education: Final Report to Congress (Volume I)*, noted that, "While they have less formal education than academic teachers, secondary vocational teachers have more occupational experience related to their subject areas" (p. 19). In their report to Congress, Boesel and McFarland recommended that "a bachelor's degree with pre-service training in education should be a standard requirement for the certification of all new vocational teachers and occupational faculty. A limited amount of relevant occupational experience should also be required or encouraged in most subjects" (p. 20).

Today, many states are finding it increasingly difficult to employ teachers in certain subject areas. The U.S. Department of Education estimates that schools will need to hire more than 2 million new teachers in the next decade (Hellmich, 2001; Help Wanted: 2 Million Teachers, 1999; Teacher Retention Is No Easy Task, 2000). Shortages are most acute in urban and rural disadvantaged districts. Further, shortages are not uniform across fields. The greatest need is in special education, and there are also acute teacher shortages in science, mathematics, and career and technical education.

To address teacher shortage, states have offered condensed training programs for those holding non-education baccalaureate degrees, or states allow hiring of individuals who have participated in national programs such as Teach for America or Troops to Teachers (see Appendix II for a list of Alternative Teacher Certification Sources). In addition, state departments of education, colleges and universities, and local school systems offer in-service and staff development programs. Programs to recruit teachers may require the development of alternative certification routes for individuals without education degrees.

Debate about Alternative Certification Practices

According to Kwiatkowski (1999), alternative teacher certification "is already one of the most hotly debated issues since chalk first met blackboard" (p. 215). He states that between 1983 and 1996, more than 50,000 individuals in the United States received alternative certification. He expected this trend to accelerate, driven by a widespread desire to improve education through alternative teacher training and certification via four strategies:

1. increasing the number of teachers available and competent, in high-demand specialties,

2. increasing the diversity of the pool of teachers,

3. increasing staffing levels in schools experiencing staff shortages, such as urban schools, and

4. decreasing the need for emergency credentialing. (p. 216)

Truell (1999) conducted a study to compare the concerns of traditionally versus alternatively certified marketing teachers. Of the 141 marketing teachers participating in the study, 30% were traditionally certified and 70% were alternatively certified. Participants rated seven broad categories of concerns using a 5 point Likert-type scale. The seven categories included: human relations, classroom management and routines, instructional activities and methods, personal concerns, conditions of work, evaluation problems, and professional growth. The most serious concern reported by both groups was demands on time. Compared with alternatively certified marketing teachers, traditionally certified teachers reported a higher concern level in the instructional activities and methods category for formulating instructional objectives, sequencing instruction, explaining subject matter, planning and preparing lesson plans, and handling controversial topics (p. 98).

Diversity. The racial and ethnic diversity of teachers is also part of the alternative teacher certification debate. Many believe that minority students benefit by seeing teachers in their school who look like them and who can serve as role models. Feistritzer (1993) reported that just 9% of teachers, but 26% of students, are minorities. They estimated that by the year 2000, 5% of teachers and 33% of students would be minorities. Houston, Marshall, and McDavid (1993) argue that alternative certification holds the promise of diversifying the teacher workforce. They studied the characteristics of participants in alternative and traditional certification programs in the Houston school district and found that alternatively certified teachers represented much greater diversity than traditionally certified teachers. Specifically, alternatively certified teachers were more likely than traditionally certified teachers to be male (24% vs. 6%); more likely to be African American (29% vs. 13%); less likely to be Anglo (48% vs. 67%); and more likely to be 30 to 40 years of age (42% vs. 14%).

Effects on student achievement. The ability of alternatively certified teachers to be effective in the classroom, and thereby improve student achievement, is also debated. Shen (1997), while agreeing that alternative certification can be helpful in diversifying the teaching workforce and alleviating shortages, has several concerns about alternative certification. In a study based on the 1993-1994 Schools and Staffing Survey conducted by the National Center for Education Statistics, Shen reports that (a) alternatively certified teachers appeared to have lower academic qualifications than traditionally certified teachers; (b) relatively few individuals were recruited from other fields through alternative certification, while new college graduates took advantage of alternative programs to avoid the rigors of traditional ones; and (c) a lower percentage of alternatively certified teachers reported expecting that teaching would be their lifelong career, raising concerns about retention. Further, in Shen's view, the larger proportion of alternatively certified teachers employed in inner city schools raised questions about the quality of teaching and educational equity for low-income students.

Darling-Hammond (2000) reported that alternative certification was negatively correlated with student achievement. She compared 4th- and 8th- grade reading and math student achievement scores across the United States and found that in states with more restrictive licensing practices (e.g., Minnesota and Wisconsin), students had higher achievement scores than did students in states with more liberal licensing practices (e.g., Louisiana and Texas). This was true even after controlling for student poverty and for student language background (Limited English Proficiency status).

Alternatively certified CTE teachers bring with them, in most cases, years of experience working as a professional in their field of instruction. The benefits of this experience are widely acknowledged. However, Lynch (1998) reviewed research on the value of occupational experience in the preparation of CTE teachers and found no measurable impact on teaching quality. He stated, "There is no reliable correlation between years of occupational experience or scores on occupational competency tests and such variables as teacher qualifications, satisfaction, or effectiveness" (p. 47).

Using data from the National Educational Longitudinal Study of 1988, also known as NELS: 88, Goldhaber and Brewer (1999) examined the academic achievement of students as a function of their teachers' credentials, and found no relationship. They examined student

outcomes in math, science, English/writing, and history in relation to their teachers' levels of education in subject matter and type of teacher certification. They found that when student characteristics were held constant, student performance was higher (a) when teachers had bachelor's or master's degrees in the subject matter they taught, and (b) when teachers had any type of certification (standard, emergency, alternative, or private school) versus no certification or certification in a different subject. Overall, Goldhaber and Brewer found that despite the wide variation in state licensure policies, there was little evidence that these policies had an impact on student performance. They noted that there is "remarkably little rigorous research" (p. 84) concerning such important questions as whether teachers with traditional licenses perform better than those with alternative licenses, whether some components of teacher licensure are more effective than others, and what affect licensure has on the quality of individuals entering teaching.

Darling-Hammond, Berry, and Thoreson (2001) challenged Goldhaber and Brewer's (1999) findings, pointing out that the number of alternatively certified teachers in the NELS: 88 sample was very small and that most had qualifications similar to those of traditionally certified teachers. They believed there were methodological problems with Goldhaber and Brewer's statistical analysis. Goldhaber and Brewer (2001), in a rejoinder, questioned the validity of most of the criticisms offered, and noted in particular the lack of scientific rigor in many of the studies cited by Darling-Hammond, Berry, and Thoreson. Goldhaber and Brewer commented on the lack of data relating certification status to student achievement, and also noted the wide variation in state certification policies and the potential impact of contextual factors such as labor market conditions, stating that, "It is highly likely that in a relatively slack labor market emergency credentialed teachers look quite different from emergency credentialed teachers in a tight labor market such as exists in many states today" (p. 85).

Professional Development Practices

While some alternatively certified teachers receive extra support during their first year or two of teaching, others receive little or no support from their state or local school districts. Support for traditionally certified teachers also varies widely. Some states mandate professional development support for new teachers, while other states offer grants to individual districts to provide professional development opportunities; still others offer no statewide support for the professional development of new teachers. State funding and state mandates can affect professional development practices differently. Research conducted by Haselkorn and Fiedler (1999) found that state mandates often spur development of new teacher support programs, while state funding, without mandates, does not. As a result, teachers often rely primarily on whatever pre-service training they were able to complete.

Increasingly, professional development for novice teachers is considered a valuable strategy for improving both student achievement and teacher retention. Studies by Merchant and by Resta (as cited in Texas State Board for Educator Certification, 1998) found that provision of an induction-year program results in much higher than expected retention of teachers. "If we are serious about student achievement in Texas, we must also be serious about induction support for novice teachers" (para. 2). The Texas State Board for Educator Certification concluded that all beginning teachers should be given assignments consistent with the level of the license in which

they received training, and that they should receive two years of induction support including a trained mentor (with at least 30 minutes of contact per week) and release time for professional development (6 days in the first year and 4 days in the second year).

Whiting and Klotz (1999), while decrying the increasing reliance on alternative certification of teachers, emphasize the need for effective professional development for alternatively certified individuals:

> Rather than ignore it, we obviously have to recognize the permanence of an alternative form of certification and, rather than fight it, we must instead propose a program design that gives these potential teachers, seeking careers through such models, the pedagogical ammunition to survive the rigor of today's classroom. (p. 5)

Given the apparent intractability of the problem of teacher shortages, pragmatic approaches aimed at helping alternatively certified teachers are increasingly evident. In reviewing the research comparing traditional and alternative certification, Miller, McKenna, and McKenna (1998) stated, "alternative certification is here to stay; researchers should investigate not whether such programs work, but which ones work best" (p. 166). In other words, it is more important to focus on strategies for developing teaching competence rather than the teacher certification route.

Teacher Attrition and Retention

Retention of alternatively certified teachers is also a matter of considerable debate. Camp and Heath-Camp (1991) found that while all beginning CTE teachers tended to hold unrealistic expectations, alternatively certified teachers had additional unrealistic expectations. They expected to be treated as professionals by their school systems and they expected their students to be interested and self-motivated in class. These expectations may contribute to turnover among alternatively licensed CTE teachers who are disappointed in the realities of teaching.

In a study conducted by Ruhland (2001), secondary CTE teachers cited job-related stress as the most common reason for leaving the teaching profession. CTE teachers rated positive teaching experience, inner satisfaction, administrative support for program development, adequate time to complete job responsibilities, and perception of job security as extremely important factors contributing to their willingness to continue teaching.

Ingersoll (1999) reported teachers in high-poverty urban schools left the teaching profession for personal reasons such as pregnancy, health, family move, or family illness (45%); pursuing another job (24%); and dissatisfaction (35%). The most often-cited reasons for dissatisfaction included poor salary (45%), lack of student motivation (38%), inadequate administrative support (30%), student discipline problems (30%), inadequate time to prepare (23%), and lack of faculty influence and autonomy (18%; p. 22).

Camp and Heath-Camp (1991) studied induction of CTE teachers and found that 15% of new teachers leave the teaching profession within the first year, and more than half leave the profession within 5 years. Darling-Hammond (1997), in a study of the general population of

teachers (not limited to CTE), reported that more than 30% of new teachers leave the profession within the first 5 years of teaching. Darling-Hammond reported the annual national teacher attrition rate to be 6.6% (p. 21).

Kirby and LeBude (1998) conducted research to identify retention strategies and the nature of teacher induction programs for beginning vocational teachers in health, agriculture, and biotechnology. The authors suggested two retention strategies for the first 5 years of a new teacher's career. The first strategy was assigning a support team, rather than a single teacher, to a new teacher. The support team would include a mentor teacher and/or subject-area peer teacher, administrator, state staff, and teacher educator. The second strategy was to provide assistance to new teachers, such as adequate resource materials, facilities to support curriculum, continuing education reimbursement, and positive work climate (p. 25).

Employing a mentoring program (Odell & Ferraro, 1992) can reduce early attrition of beginning teachers. Mentors can assist with classroom management issues, locating resources, and providing advice to new teachers. New teachers are frequently given the most challenging teaching schedule, multiple courses to prepare, and classes with the most disadvantaged students. Mentoring programs can be costly, but the money saved on recruiting and rehiring teachers yearly has shown the financial effectiveness of mentoring programs. "Teachers who were still teaching after 4 years most valued the emotional support that they received from their mentors in their first year of teaching" (Odell & Ferraro, p. 203).

Overall, research has indicated that adequate pre-service preparation and in-service support of novice teachers are important to improving both teaching quality and retention. Alternative certification programs vary widely in the amount of pre-service preparation provided; individuals with little pre-service preparation and no opportunity to engage in a supervised teaching experience may need higher levels of in-service support in order to be successful. Concerning retention, the data indicates that teachers, regardless of teacher certification route, depart their jobs for a variety of reasons. Retirement accounts for a relatively small number of departures. A greater number of teachers report they depart either because they are dissatisfied with their jobs or in order to seek better jobs or other career opportunities (Ingersoll, 1999, p. 24).

METHODOLOGY

Research Design

The primary purpose of this study was to examine alternative teacher certification procedures and professional development opportunities available to secondary academic and CTE teachers, and to describe recently certified CTE teachers' teaching experiences and how they vary based upon the type of teacher certification program. A two-phase mixed methods research design was used to address the research questions for this study. This research design combines "qualitative and quantitative approaches in a single study" (Creswell, 1994, p. 177). Quantitative data were collected for research questions 1 through 6 for Phase 1 of the study. A secondary purpose was to describe the varied teaching experiences and professional development needs of recently certified CTE teachers. Qualitative data were collected for research question 7 for Phase 2 of the study. The research questions for this study were the following:

1. What are the similarities and differences between alternative teacher certification procedures for secondary academic teachers and CTE teachers?

2. Are there differences in the professional development opportunities available to recently certified secondary academic teachers and CTE teachers?

3 Are differences reported among CTE teachers grouped according to teacher certification program in their ratings of pre-service preparation?

4. Are differences reported among CTE teachers grouped according to their ratings of teaching experience and their ratings of support services used?

5. Are differences reported among CTE teachers grouped according to their ratings of teaching experience and their reported likelihood to continue in the teaching profession?

6. Are differences reported among CTE teachers grouped according to teacher certification program in their likelihood to continue in the teaching profession?

7. What are the professional development needs of recently certified CTE teachers?

The data collection methods included surveys and telephone interviews. These methods were chosen because they allowed for an analysis using both quantitative and qualitative data from state departments of education and CTE teachers hired between 1996 and 2000. State certification documents were reviewed to determine traditional and alternative certification procedures for secondary academic teachers and CTE teachers. The information was used to develop two surveys for Phase 1 of the study. One survey was developed to collect data from state departments of education regarding each state's certification procedures and professional development opportunities. A second survey was developed to collect data from CTE teachers hired between 1996 and 2000 regarding their teacher preparation program and teaching experiences. CTE teacher survey respondents were invited to participate in a subsequent

telephone interview. Phase 2 of the study provided additional insight to the varied teaching experiences and professional development needs of recently certified CTE teachers.

Population and Sample

For research questions 1 and 2, the population consisted of a representative from the state department of education from the 50 states plus the District of Columbia. State department of education personnel were contacted by e-mail between May and June 2001 to obtain information regarding alternative certification and professional development opportunities in their state. (See Appendix III for a list of state department of education certification addresses and web sites.) Follow-up phone calls were conducted with state personnel who did not respond to the initial e-mail request to return the completed survey. Thirty-six (71%) states completed the survey to provide data for research question 1 regarding types of alternative certification procedures available to secondary academic and CTE teachers. Thirty-three (65%) states completed the survey to provide data for research question 2 regarding professional development opportunities available to secondary academic and CTE teachers. See Table 2 for a list of participating states and those responding to the survey.

For research questions 3 through 6, the original population consisted of traditionally and alternatively certified CTE teacher hired between 1996 and 2000 from the 50 states and the District of Columbia. State department of education personnel were contacted by telephone and/or e-mail between February and May 2001 to determine if their state would be able to identify a list of teachers with names and addresses. In eight states, the state department of education personnel were not able to identify a list of CTE teachers, but provided information that enabled the researchers to obtain names and addresses from local school districts or teacher education programs (see Table 3). Some states responded they were unable to release teachers' names and addresses due to state privacy issues. These states were provided the option of mailing the letters and surveys directly to the teachers on behalf of the researchers; some accepted this option.

A total of 28 states (55%) were able to identify the names and addresses of traditionally and alternatively certified CTE teachers hired between 1996 and 2000 (see Table 2). Nineteen states (37%) were not able to obtain and/or identify a list of teachers' names and addresses within the timeline requested. Three states and the District of Columbia (8%) failed to respond to the request for information. Of the 28 states providing a list of teachers, one state could provide a list of teachers hired only between 1996 and 1998. Twenty states agreed to have the researchers mail the letter and survey directly to the teacher, seven states agreed to mail the letters and surveys on behalf of the researchers, and one state agreed to a joint mailing by both the researchers and state department of education personnel.

Table 2

Summary of State Participation

State	Provided Names of Teachers	Number of Surveys Sent	Responded to State Survey
Alabama	Yes	90	Yes
Alaska	Yes	90	Yes
Arizona	No	0	Yes
Arkansas	No	0	No
California	Yes	90	Yes
Colorado	No	0	Yes
Connecticut	Yes	89*	No
Delaware	Yes	15	Yes
District of Columbia	No	0	No
Florida	Yes	90	Yes
Georgia	No	0	Yes
Hawaii	No	0	No
Idaho	Yes	70	Yes
Illinois	Yes	90	No
Indiana	No	0	No
Iowa	Yes	90	Yes
Kansas	Yes	50	Yes
Kentucky	Yes	40	Yes
Louisiana	No	0	Yes
Maine	No	0	Yes
Maryland	Yes	90	Yes
Massachusetts	No	0	No
Michigan	Yes	90	No
Minnesota	Yes	90	No
Mississippi	Yes	90	Yes
Missouri	Yes	90	Yes
Montana	No	0	Yes
Nebraska	Yes	90	Yes
Nevada	No	0	Yes
New Hampshire	No	0	No
New Jersey	Yes	90	Yes
New Mexico	No	0	Yes
New York	No	0	Yes
North Carolina	No	0	Yes
North Dakota	Yes	90	Yes
Ohio	No	0	Yes
Oklahoma	Yes	90	Yes
Oregon	No	0	Yes
Pennsylvania	No	0	No

(continued)

Table 2 *(continued)*

Summary of State Participation

State	Provided Names of Teachers	Number of Surveys Sent	Responded to State Survey
Rhode Island	Yes	8	Yes
South Carolina	No	0	No
South Dakota	Yes	24	Yes
Tennessee	No	0	Yes
Texas	Yes	90	No
Utah	No	0	No
Vermont	No	0	Yes
Virginia	Yes	65	No
Washington	Yes	90	Yes
West Virginia	Yes	20	Yes
Wisconsin	Yes	90	Yes
Wyoming	Yes	90	Yes

Note. Received 90 names, of which one name was a duplicate.

The sample of CTE teachers for the study consisted of the names identified by the 28 states. See Table 2 for a list of participating states and the number of surveys sent within each state. Each state was asked to provide a random sample of 90 teachers if the state identified more than 90 teachers hired between 1996 and 2000. Eight states identified fewer than 90 teachers hired between 1996 and 2000 (see Table 3). For these 8 states, the entire population was included in the mailing.

For research question 7, the population consisted of CTE teachers hired between 1996 and 2000. Names were provided by the 28 states. The sample consisted of those teachers who completed the survey and responded via e-mail of their interest in participating in a telephone interview. Seventeen CTE teachers initially responded. Following an e-mail communication in June 2001, 14 CTE teachers agreed to participate in the telephone interview to be conducted between July and August 2001.

Table 3

Identification of Participants from States with Fewer than 90 CTE Teachers Hired 1996—2000

State	Number of Participants	Non-Random Conditions
Delaware	15	Names of administrators from three vocational-technical secondary schools and one university teacher education program were provided to the researchers. One administrator from the vocational-technical secondary school responded and agreed to distribute the surveys to teachers at his school.
Idaho	70	Names of teachers with an Occupational Specialist certificate were obtained. This certificate is an alternative certification program through which individuals obtain certification during a 3 year period of teaching. Names were not available for traditionally certified teachers.
Kansas	50	Surveys were sent to the list of names made available by the job placement office at Kansas State University. The office provided only the names of teachers and their employing schools. The researchers identified school addresses using the Internet.
Kentucky	40	Surveys were sent to CTE teachers certified in 2000–2001 only.
Rhode Island	8	E-mail communication was sent to six administrative contacts at CTE centers. One administrator provided a list of names and addresses.
South Dakota	24	Names and addresses were obtained from CTE teachers participating in a required mentorship program for individuals who did not have an education degree. The majority of the names provided were those of trade and industrial education teachers.
Virginia	65	E-mail communication was sent to 131 Virginia career and technical education administrators. Thirteen school districts provided a list of names and addresses.
West Virginia	20	E-mail communication was sent to 55 West Virginia county superintendents. Six provided a list of names and addresses.

Data Sources and Data Collection Procedures

Each of the data sources and data collection procedures is described below. Data were collected in two phases using surveys and telephone interviews.

Surveys—State Departments of Education

Researchers contacted state departments of education by telephone and/or e-mail to obtain information related to each state's certification procedures and professional development opportunities. The types of information requested were (a) state certification procedures that apply to secondary academic and CTE teachers seeking traditional or alternative teacher certification, (b) URL for state certification web site, (c) procedure to obtain a list of traditionally or alternatively certified CTE teachers hired between 1996 and 2000, and (d) telephone and mailing address for each state department of education contact. If the information needed for the research project was not available on the web site, state department of education personnel were asked to send the information, or the information was obtained over the phone. (See Appendix III for a list of state department of education certification addresses and web sites.)

Data Collection Procedure—State Departments of Education

State departments of education were asked to respond to a survey regarding teacher certification procedures and professional development opportunities available to secondary academic and CTE teachers. To collect data regarding teacher certification, respondents were asked to verify and/or make changes to the certification classes initially identified in their state from a study conducted by Feistritzer and Chester (2000). Nationwide, Feistritzer and Chester identified 10 classes they use to categorize the alternative teacher certification policies of states. Nine of the classes represent categories of alternative certification available to individuals entering the teaching profession for the first time; the remaining category is used by states having no alternative certification routes. (See Appendix IV for a summary of alternative teacher certification procedures by state, and definitions of the 10 alternative certification classes.)

To collect data regarding professional development opportunities, respondents were asked to report data in three areas: (a) types of state support provided for professional development programs, (b) types of teachers who are provided the opportunity to participate in the professional development programs, and (c) types of professional development practices currently provided. If state support was reported, respondents were asked to indicate if the state support was required, optional, or funded by the local school district. A list of 12 professional development practices was provided for respondents to indicate those provided to secondary academic and CTE teachers. In addition to the list provided, respondents could list "other" practices. (See Appendix V for a summary of professional development opportunities by state.)

The surveys were sent via e-mail between May and July 2001 to the representative identified at the state department of education. Follow-up phone calls and e-mails were conducted with any representative who did not respond to the initial survey request for alternative certification procedures and professional development opportunities. Thirty-six

(71%) states provided data regarding alternative certification procedures, and 33 (65%) states provided data regarding professional development opportunities within the timeline requested.

Survey—Career and Technical Education Teachers

A two-page survey was designed based on information from a review of state documents and from a survey previously developed by Ruhland (2001). CTE teachers were asked to respond to 10 multi-part questions related to their teacher preparation and experiences in teaching, plus 5 demographic questions (see Appendix VI for a copy of the survey). The following questions were used to gather information concerning teacher preparation and experiences in teaching:

1. In which subject(s) are you certified to teach?
2. At the time you began teaching, had you completed all the requirements for teacher certification?
3. How would you describe your teacher certification program?
4. Are you currently teaching?
5. How would you rate your pre-service preparation?
6. What professional development resources were provided to you as a beginning teacher?
7. What support was available and used prior to or during your first six months of teaching?
8. How would you rate your teaching experience so far?
9. How important is each listed factor in determining your intentions to continue or not continue teaching?
10. What is the likelihood of your continuing in the teaching profession?

The demographic section queried age, gender, level(s) of education completed, and ethnicity.

The following procedure was completed as part of the study to establish the validity of the survey instrument. A panel of six experts was invited to review the Certification Strategies for Career and Technical Education Teachers survey in March 2001. Each panel member was either traditionally or alternatively certified, or familiar with the educational preparation of CTE teachers and the skills and abilities taught in the teacher preparation program. These experts were asked to make recommendations for improving, adding, or deleting any survey item to assure each survey question was measuring what the question intended. After the panel established content validity, the revised Certification Strategies for Career and Technical Education Teachers survey was pretested by the researchers in March 2001 with a pilot study of 12 CTE teachers. These teachers were certified either traditionally or through an alternative

certification program. Six (50%) responses were received. Comments were obtained from each of the teachers, and improvements made to the survey. Most changes focused on the re-wording of questions to increase clarity.

Data Collection Procedure—Career and Technical Education Teachers

Finalized surveys were sent to 2,091 CTE teachers in April and May 2001. A postcard was sent to each participant 2 weeks after the initial mailing. Of the surveys mailed, 115 were undeliverable due to incorrect addresses. A total of 679 completed surveys were received by June 18, 2001. Of the 679 surveys returned, 632 were usable. Forty-seven respondents indicated a certification area other than CTE; therefore, these surveys were considered non-usable. A response rate of 33% was determined by subtracting the number of undeliverable surveys (115) and non-usable (47) surveys from the sample size (2,091), and dividing the usable returned surveys (632) by the adjusted sample size (1,929).

Telephone Interviews—Career and Technical Education Teachers

The telephone interview protocol included three major areas of questions and supportive probes. Teachers were asked to describe the teacher preparation program in which they had participated, describe their 1st year teaching experience, and the professional development programs that had been provided to them. A pilot test was conducted with three CTE teachers in Minnesota. Four CTE teacher educators reviewed and recommended changes for the telephone interview questions. The questions were revised based upon feedback received from the teachers and teacher educators. (See Appendix VII for the telephone interview questionnaire.)

Data Collection Procedure—Career and Technical Education Teachers

CTE survey respondents were asked to inform the researchers via e-mail of their interest in participating in a telephone interview that would focus on more in-depth discussion of the pre-service and professional development experiences of the secondary CTE teachers. Seventeen CTE teachers responded as having an interest in the telephone interview. Confirmation by e-mail of the 17 initial CTE teachers was completed by June 29, 2001. Fourteen of the initial respondents agreed to the telephone interview. A confirmation letter with the date and time of the scheduled interview and the consent form to tape the telephone interview was sent to each participant by July 6, 2001.

Fourteen telephone interviews were conducted during July and August 2001, with participants from all five geographic regions designated in the NRCCTE research agenda. If a consent form had been signed and returned to the researchers, the telephone interview was taped. If a consent form was not received, the interview was not taped. In addition, the researchers took handwritten notes during each interview. Participants were asked to respond to a list of questions provided on the telephone interview protocol, and they were also encouraged to add comments. The interviews ranged from 15 to 55 minutes, and averaged 30 minutes.

Data Analysis

Quantitative and qualitative methods were used to analyze data. Quantitative data analysis was used to analyze data from the surveys. The chi-square test for independence was

used to determine statistical significance. Significance was set at $p \leq .05$. Due to the nature of the data collected and the nature of the chi-square test used, we do not specifically know where significant differences are for the types of teacher certification programs described (e.g., baccalaureate degree in education, fifth-year or post-baccalaureate, and alternative); we know that there are differences and they probably were not due to chance. Qualitative data analysis was used to analyze data from the telephone interviews, reporting key words by frequency of response.

Limitations

1. Not all states were able to provide a list of traditionally or alternatively certified CTE teachers hired between 1996 and 2000. Therefore, results cannot be generalized on a national level.

2. Not all names of traditionally or alternatively certified CTE teachers hired between 1996 and 2000 provided by state department of education personnel were randomly selected.

3. In the state documents, the terms "certification" and "licensure" are used interchangeably, resulting in the reporting of state information based upon interpretation by the researchers.

4. Survey participants were asked to describe their teacher certification program. Participants could select (a) baccalaureate degree in education that leads to certification, (b) fifth-year or post-baccalaureate program that leads to certification, (c) alternative certification (non-traditional), and (d) other. The program selected by each participant is based upon the participant's understanding of each program type listed; therefore, the Results section reports findings for each type of program.

5. Survey participants were asked to provide the number of years they had taught. Due to the low response rate for this question, data could not be analyzed based upon years of teaching experience.

6. Individuals participating in the telephone interviews were self-selected (non-random).

RESULTS

Results are reported for each of the three data sources used to collect data for this research study. The following sections report results for data collected from the surveys sent to state departments of education and CTE teachers, and from telephone interviews conducted with CTE teachers.

Survey Results—State Departments of Education

State departments of education provided the information related to each state's certification procedures and professional development opportunities. The following sections provide the results for research questions 1 and 2.

Alternative Teacher Certification Procedures

State departments of education were asked to indicate the types of alternative teacher certification available to secondary academic and CTE teachers. Findings for research question 1, "What are the similarities and differences between alternative teacher certification procedures for secondary academic teachers and CTE teachers?" are described in the paragraphs that follow.

Respondents were asked to indicate the types of alternative teacher certification for secondary academic and CTE teachers in their states using the 10 alternative teacher certification classes identified by Feistritzer and Chester (2000). (See Appendix IV for the definitions of the 10 alternative certification classes.) Class A and B are designed for individuals who currently have at least a bachelor's degree. Class B is restricted to addressing teacher shortages. Class C reviews an individual's academic and professional background and transcripts, and is the responsibility of the state and/or local school district. Class D is similar to Class C; however, Class C is the responsibility of higher education. Class E is for post-baccalaureate programs at institutions of higher education. Class F provides individuals an emergency certificate or waiver to teach. In addition, individuals obtaining a Class F must receive on-site supervision and enroll in teacher education courses. Class G is provided for individuals who have almost completed certification, and for individuals moving from state to state. Class H is for individuals with special qualifications. Class I is for individuals who don't qualify to participate in an alternative or traditional certification program. Class J is intended to eliminate emergency certification routes.

Thirty-six (71%) states provided data for research question 1. Table 4 reports the number of states in which each type of alternative certification class is available for secondary academic and eight CTE certification areas. In this study, CTE certification areas included agriculture, business, computer science, family and consumer science, health, marketing, technology education, and trade and industrial. (See Appendix IV for a summary of state responses to alternative certification procedures.) Computer science was the only CTE certification area that had 6 or fewer states reporting use of any of the 10 alternative teacher certification classes. Of the states responding, Alaska and Montana were the only states reporting no teacher certification routes for CTE teachers other than the traditional college teacher education route (Class I).

The most frequently identified alternative teacher certification class (see Table 4) by teaching area was: (a) academic, Class F (36%); (b) agriculture, Class C (28%); (c) business, Class C (28%); (d) computer science, Class C (17%); (e) family and consumer science, Class F (31%); (f) health, Class C (28%) and Class F (28%); (g) marketing, Class A (28%) and Class C (28%); (h) technology, Class A (31%); and (i) trade and industrial, Class C (28%). Class I (no alternative routes available) and Class J (intent is to eliminate emergency routes) were reported the least often as alternative teacher certification classes for secondary academic and CTE teachers. Most of the states reported having multiple alternative certification classes available for academic and CTE teachers. The alternative certification classes available for academic teachers were similar to those available for CTE teachers.

Table 4

Number of States Reporting Use of Alternative Certification Classes[a] (A–J) for Academic and CTE Areas

	Alternative Certification Classes									
Certification Area	A	B	C	D	E	F	G	H	I	J
Academic	10	10	10	12	8	13	8	7	6	5
Agriculture	9	7	10	7	7	9	7	5	4	3
Business	9	7	10	9	8	9	6	6	3	3
Computer Science[b]	4	2	6	4	1	5	1	1	4	1
Family and Consumer Science (Home Economics)	7	6	10	7	6	11	5	5	4	3
Health	8	5	10	7	3	10	6	6	3	2
Marketing (Distributive Education)	10	6	10	7	6	6	6	5	3	4
Technology	11	7	9	9	7	9	7	4	3	4
Trade and Industrial	8	4	10	4	4	8	4	6	3	2

Note. $N = 36$.

[a]See Appendix IV for definitions of certification classes. [b]Some states designate computer science as a separate certification area.

Professional Development Opportunities

Research question 2 was, "Are there differences in the professional development opportunities available to recently certified secondary academic teachers and CTE teachers?" Thirty-three (65%) states provided data relevant to this question (see Appendix V for a summary of state responses to professional development opportunities). State departments of education were asked to report data in three areas: (a) types of state support provided for professional development programs, (b) types of teachers who are provided the opportunity to participate in the professional development programs, and (c) types of professional development practices currently provided.

State departments of education were asked to identify which of the following types of state-supported professional development programs currently exist: (a) state-wide required program, (b) state-wide optional program, and/or (c) local programs funded by state grants. Respondents were asked to mark all types of state-supported programs that apply to their state

and categories of new teachers for which professional development programs are available (e.g., academic, CTE teachers). Of the 33 states reporting, 13 states (39%) reported having a state-wide required professional development program. Eight states (24%) that did not have state-wide required programs did report offering state-wide optional programs. Fifteen states (45%) reported they currently have state-wide local professional development programs funded by state grants. (Respondents did not indicate if these programs were required or optional.) Professional development programs were made available to both secondary academic teachers and CTE teachers in all responding states.

Respondents were asked to identify the types of professional development practices currently available in their state. Mentor (67%) was the most frequent state-wide professional development practice identified, followed by professional development workshops (61%). (See Table 5 for frequency of states reporting types of professional development practices.) The least frequently reported professional development practice was paid curriculum development time prior to beginning as a teacher (15%). Respondents listed other opportunities, including new teacher visits, site-based opportunities, and course work through an accredited college or university. Three states (Maine, New York, and New Jersey) reported that all 12 professional development practices were available to teachers. Four states (Kansas, Oregon, Tennessee, and Wyoming) reported only one type of professional development opportunity. Kansas and Tennessee provided a mentor, and Oregon and Wyoming required a professional development plan.

Table 5

Number of States Reporting Professional Development Practices

Professional Development Practices	*f*	%
Mentor	22	67
Professional development workshops	20	61
Professional development resource centers	15	45
Professional development plan	15	45
Assistance with selecting curriculum and instructional resources	14	42
Orientation session to school's policies and procedures	14	42
Certification courses (offered on-site)	12	36
Support from a professional development coordinators	12	36
Teacher handbook	12	36
Certification courses (tuition reimbursement)	11	33
Peer support group	9	27
Paid curriculum development time prior to beginning as a teacher	5	15
Other	5	15

Note. $N = 33$. Professional development practices are listed in order of frequency reported.

Survey Results—Career and Technical Education Teachers

The survey collected data from CTE teachers regarding demographics, CTE certification areas, type of teacher certification program, status of requirements for teacher certification, pre-service preparation, support services used, rating of teaching experience, and likelihood to remain in the teaching profession. (See Appendix VI for a copy of the survey.)

Demographics

Of the 632 CTE survey respondents certified between 1996 and 2000, 30% were between 30 and 40 years of age, 29% between 41 and 50 years of age, 21% were under 30 years of age, and 20% were 51 years of age or older. Fifty-two percent of the respondents were female and 45% were male (3% of the respondents did not indicate gender). Respondents were asked to identify all levels of education completed. The majority of respondents (75%) had completed at least a bachelor's degree. Twenty-seven percent completed a master's degree, and 19% completed an associate degree. Respondents (10%) identified other credentials, including diplomas and certificates, and degree completion in progress. The majority of respondents (87%) were White, non-Hispanic.

Career and Technical Education Certification Areas

Respondents were asked to identify all CTE certification areas they were currently certified to teach (see Table 6). Of the 632 respondents, 239 (38%) were certified in more than one CTE area. There were responses reported in the "other" category due to state variation as to how courses and/or programs within CTE certification areas are identified. The other certification areas identified by respondents were courses and/or program titles that are considered CTE subject areas (e.g., medical office procedures, networking, auto technology, cosmetology, and culinary arts). Survey responses reported by overall CTE and individual certification area are provided in Appendixes VIII through XVI.

Table 6

Certification Area

Career and Technical Education Certification Area	*f*	%
Agriculture	64	10
Business	202	32
Computer Science[a]	60	9
Family and Consumer Science (Home Economics)	95	15
Health	54	9
Marketing (Distributive Education)	69	11
Technology	126	20
Trade and Industrial	157	25
Other	118	19

Note. $N = 632$. Percentage does not total 100% because some teachers reported certification in more than one CTE area.

[a]Some states designate computer science as a separate certification area.

Current Teaching Status

Of the 632 respondents, 579 (94%) reported they were currently teaching; 21 (3%) of the respondents had left the teaching profession; and 6 (1%) respondents indicated they had not entered the teaching profession. Eight (2%) of the respondents did not indicate their current teaching status.

Teacher Certification Programs

States vary as to whether fifth-year or post-baccalaureate certification programs are identified as traditional or alternative certification routes. Therefore, the following sections report results based upon the type of teacher certification program respondents selected in the survey. Forty-seven percent of the respondents indicated they had completed a baccalaureate degree in a teacher education certification program. Participation in a fifth-year or post-baccalaureate program was reported by 18% of the respondents, and 28% of the respondents reported participating in an alternative teacher certification program. Other types of teacher certification programs (3%) identified by the respondents included those that could be characterized as work experience, certificate, and vocational certificate that would meet requirements leading to a provisional certificate (see Table 7).

Table 7

Teacher Certification Program

Type of Program	*f*	%
Baccalaureate degree in education that leads to certification	294	47
Fifth-year or post-baccalaureate program that leads to certification	111	18
Alternative certification (non-traditional)	180	28
Other	22	3
Non-Response	25	4

Note. $N = 632$.

It is interesting to note that 25 (4%) of the respondents did not identify type of teacher certification program completed. This may be an indication that teachers do not know the type of teacher certification program they completed. However, this may further reflect the variation in states as to whether fifth-year or post-baccalaureate certification programs are identified as traditional or alternative certification routes.

Of the respondents participating in a fifth-year or post-baccalaureate program, 82% had completed at least a bachelor's degree. Fifty-two percent of the alternative certification program respondents had completed at least a bachelor's degree. Table 8 reports teacher certification program by CTE certification area.

Table 8

Teacher Certification Program by Career and Technical Education Certification Area

Certification Area	Number of Responses		Bac. Degree[a]		Fifth-year or Post-Bac.[b]		Alternative Certification		Other		Non-Response	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Agriculture	64	8	11	17	7	11	36	56	5	8	5	8
Business	202	24	108	53	39	19	43	21	6	3	6	3
Computer Science[c]	60	7	37	62	11	18	10	17	1	2	1	2
Family and Consumer Science (Home Economics)	95	11	61	64	16	17	12	13	3	3	3	3
Health	54	7	12	22	8	15	28	52	4	7	2	4
Marketing (Distributive Education)	69	8	34	49	11	16	19	28	4	6	1	1
Technology	126	15	63	50	22	17	32	25	2	2	7	6
Trade and Industrial	157	19	48	31	22	14	73	46	6	4	7	4

Note. $N = 632$. Non-responses account for the remaining percent values by certification area. [a]Baccalaureate degree in education. [b]Fifth-year or post-baccalaureate program that leads to certification. [c]Some states designate computer science as a separate certification area.

Completion of Teacher Certification Requirements

Overall, 59% of the CTE respondents reported they had completed all the requirements for teacher certification when they began teaching. Thirty-eight percent reported they had not completed the certification requirements when they began teaching, and 3% of the respondents did not indicate the status of completing certification requirements. Respondents who indicated they had not completed all the teacher certification requirements indicated they were certified through an alternative route. Table 9 reports the completion or non-completion of certification requirements by CTE area at the time the respondents began teaching. The majority of respondents from agriculture (58%), health careers (65%), and trade and industrial (59%) indicated they had not completed all the certification requirements when they began teaching. Of those respondents who had not completed the teacher certification requirements at the time they began teaching ($N = 310$), 70% reported they had since completed the teaching certification requirements.

Table 9

Completion of Teacher Certification Requirements When Teaching Began

Certification Area	Number of Responses		Requirements Completed		Requirements Not Completed		Non-Response	
	f	%	*f*	%	*f*	%	*f*	%
Agriculture	64	8	23	36	37	58	4	6
Business	202	24	148	73	49	24	5	3
Computer Science[a]	60	7	49	82	9	15	2	3
Family and Consumer Science (Home Economics)	95	11	71	75	22	23	2	2
Health	54	7	18	33	35	65	1	2
Marketing (Distributive Education)	69	8	47	68	20	29	2	3
Technology	126	15	75	60	45	36	6	4
Trade and Industrial	157	19	62	39	93	59	2	2

Note. $N = 632$. Non-response account for remaining percent values by certification area.
[a]Some states designate computer science as a separate certification area.

Pre-Service Preparation

CTE respondents rated the adequacy of pre-service preparation in four areas, as experienced during their first six months of teaching. With regard to knowledge of subject matter, CTE respondents rated their pre-service preparation as very adequate (61%). Pre-service preparation was rated as moderately adequate for pedagogy (42%) and classroom management skills (38%). Respondents rated strategies for working with special populations as somewhat adequate (40%) (see Table 10).

Table 10

Pre-Service Preparation Ratings

Pre-Service Preparation	Not Adequate		Somewhat Adequate		Moderately Adequate		Very Adequate		Non-Response	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Pedagogy or teaching methods	71	11	141	22	268	42	137	22	15	2
Knowledge of subject matter	15	2	29	5	188	30	385	61	15	2
Classroom management skills	66	10	197	31	238	38	119	19	12	2
Strategies for working with special populations	113	18	250	40	188	30	70	11	11	2

Note. $N = 632$. Percentages do not total 100% due to rounding.

Research question 3 asked, "Are differences reported among CTE teachers grouped according to teacher certification program in their ratings of pre-service preparation?" To answer this question, the type of teacher certification program (see Table 7) and ratings of pre-service preparation (see Table 10) were combined to create a contingency table for analysis (Tables 11–14). Significance for this and all subsequent statistical tests was set at $p \leq .05$ and p values are rounded to three digits. All chi-square test for independence was calculated on raw data. Due to the nature of the data and the test chosen for significance, it is not known where the differences being reported are (e.g., baccalaureate, fifth-year, or alternative), based upon type of teacher certification program. However, there are indeed differences that probably are not due to chance.

The following four tables provide results for pre-service preparation in pedagogy (see Table 11), knowledge of subject matter (see Table 12), classroom management skills (see Table 13), and strategies for working with special populations (see Table 14). Significant differences were found in the pre-service preparation areas of pedagogy ($p < .05$) and knowledge of subject matter ($p < .05$). No significant differences were found in ratings of pre-service preparation areas of classroom management skills and strategies for working with special populations.

Table 11

*Comparison of Types of Teacher Certification Programs by Rating of Pre-Service Preparation in Pedagogy**

Certification Program	Number of Responses		Not Adequate		Somewhat Adequate		Moderately Adequate		Very Adequate	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Baccalaureate	290	49	20	7	56	19	130	45	84	29
Fifth-Year	108	18	13	12	17	16	59	55	19	18
Alternative	177	30	32	18	58	33	60	34	27	15
Other	22	4	1	5	5	23	10	45	6	27

Note. $N = 632$. *Significant at $p < .05$, $\chi^2 = 42.718$, $df = 9$. Percentages do not total 100% due to rounding or non-responses.

Table 12

*Comparison of Types of Teacher Certification Programs by Rating of Pre-Service Preparation in Knowledge of Subject Matter**

Certification Program	Number of Responses		Not Adequate		Somewhat Adequate		Moderately Adequate		Very Adequate	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Baccalaureate	290	48	7	2	14	5	108	37	161	56
Fifth-Year	108	18	3	3	4	4	35	32	66	61
Alternative	178	30	4	2	7	4	35	20	132	74
Other	22	4	0	0	4	18	3	14	15	68

Note. $N = 632$. *Significant at $p < .05$, $\chi^2 = 29.002$, $df = 9$. Percentages do not total 100% due to rounding or non-responses.

Table 13

*Comparison of Types of Teacher Certification Programs by Rating of Pre-Service Preparation in Classroom Management Skills**

Certification Program	Number of Responses		Not Adequate		Somewhat Adequate		Moderately Adequate		Very Adequate	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Baccalaureate	291	48	32	11	87	30	115	40	57	20
Fifth-Year	109	18	9	8	39	36	41	38	20	18
Alternative	179	30	20	11	59	33	69	37	33	18
Other	22	4	2	9	5	23	9	41	6	27

Note. $N = 632$. *Not significant, $\chi^2 = 3.275$, $df = 9$. Percentages do not total 100% due to rounding or non-responses.

Table 14

*Comparison of Types of Teacher Certification Programs by Rating of Pre-Service Preparation in Special Populations Strategies**

Certification Program	Number of Responses		Not Adequate		Somewhat Adequate		Moderately Adequate		Very Adequate	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Baccalaureate	292	49	48	16	112	38	102	35	30	10
Fifth-Year	109	18	17	16	47	43	36	33	9	8
Alternative	179	30	38	21	73	41	41	23	27	15
Other	22	4	4	18	11	50	6	27	1	5

Note. $N = 632$. *Not significant, $\chi^2 = 12.687$, $df = 9$. Percentages do not total 100% due to rounding or non-responses.

Concerning pre-service preparation in pedagogy, it is interesting to note that 29% of those with a baccalaureate degree in education reported they were very adequately prepared, which is nearly double the percentage of those in fifth-year or post-baccalaureate programs (18%) and/or those who received alternative certification (15%). In the area of knowledge of subject matter, 74% of the alternatively certified respondents said they were very adequately prepared. In contrast, 56% of the baccalaureate degree and 61% of the fifth-year or post-baccalaureate respondents reported very adequate pre-service preparation in the area of knowledge of subject matter preparation.

Support Services Used

Of the eight support services listed on the survey (question 7), four support services were reported available and used during the first six months of teaching by over 50% of the CTE teachers: curriculum and instructional resources (72%), teacher handbook (60%), orientation to school's policies and procedures (59%), and mentor (51%; see Table 15). Three of the eight support services listed were reported as not available to more than 50% of the CTE teachers: on-

site certification courses (71%), paid curriculum development time prior to teaching (69%), and tuition assistance for certification courses (66%).

Table 15

Support Services Teachers Used During First Six Months of Teaching

Support Services	Not Available		Available Did Not Use		Available Used Some Degree		Available Used Significant Degree		Non-Response	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Teacher handbook	109	17	117	19	261	41	122	19	23	4
Curriculum and instructional resources	79	13	72	11	242	38	214	34	25	4
Mentor	186	29	97	15	171	27	153	24	25	4
Peer support group	233	37	106	17	176	28	92	15	25	4
Orientation to school's policies and procedures	97	15	135	21	267	42	110	17	23	4
Paid curriculum development time prior to teaching	433	69	54	9	67	11	44	7	34	5
On-site certification courses	447	71	66	10	53	8	29	5	37	6
Tuition assistance for certification courses	416	66	58	9	55	9	71	11	32	5

Note. $N = 632$. Percentages do not total 100% due to rounding.

Teaching Experience and Support Services Used

Twenty-two percent of the respondents rated their teaching experience as extremely positive, 41% of as very positive, and 23% as positive (see Table 16). Research question 4 asked, "Are differences reported among CTE teachers grouped according to their ratings of teaching experience and their ratings of support services used?" A chi-square test for independence ($p \leq .05$) was used to analyze data using rating of teaching experience (see Table 16) and support services used (see Table 15).

Table 16

Teacher's Rating of Teaching Experience

Rating	*f*	%
Extremely Positive	142	22
Very Positive	260	41
Positive	148	23
Somewhat Positive	65	10
Not at All Positive	5	1
Non-Response	12	2

Note. $N = 632$. Percentages do not total 100% due to rounding.

The following eight tables provide results of comparisons for rating of teaching experience and rating of support services used (see Tables 17–24). (Number of responses vary due to non-responses to some questions.). Significant differences were reported in rating of teaching experience and utilization of four of the eight listed support services: (a) curriculum and instructional resources ($p < .05$), (b) peer support group ($p < .05$), (c) orientation to school's policies and procedures ($p < .05$), and (d) paid curriculum time prior to teaching ($p < .05$). There were no significant differences reported in rating of teaching experience and utilization of four of the eight listed support services: (a) teacher handbook, (b) mentor, (c) on-site certification courses, and (d) tuition assistance for certification courses.

Table 17

*Comparison of Teaching Experience and Use of Teacher Handbook**

Use of Teacher Handbook	Number of Responses		Extremely Positive		Very Positive		Positive		Somewhat Positive		Not at All Positive	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Not Available	109	18	17	16	43	39	30	28	17	16	2	2
Available Did Not Use	116	19	19	16	51	44	31	27	14	12	1	1
Used Some	261	42	71	27	104	40	60	23	25	10	1	0
Used Significantly	120	19	34	28	54	45	24	20	7	6	1	1
Non-Response	14	2	1	7	8	57	3	21	2	14	0	0

Note. $N = 632$. **Not significant*, $\chi^2 = 21.328$, $df = 16$. Percentages do not total 100% due to rounding or non-responses.

Table 18

*Comparison of Teaching Experience and Use of Curriculum and Instructional Resources**

Use of Curriculum and Instructional Resources	Number of Responses		Extremely Positive		Very Positive		Positive		Somewhat Positive		Not at All Positive	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Not Available	79	13	14	18	26	33	21	27	17	22	1	1
Available Did Not Use	72	12	2	14	26	36	23	32	12	17	1	1
Used Some	242	39	48	20	112	46	58	24	23	10	1	0
Used Significantly	211	34	68	32	88	42	42	20	11	5	2	1
Non-Response	16	3	2	13	8	50	4	25	2	13	0	0

Note. $N = 632$. *Significant at $p < .05$, $\chi^2 = 39.139$, $df = 16$. Percentages do not total 100% due to rounding or non-responses.

Table 19

*Comparison of Teaching Experience and Use of Mentor**

Use of Mentor	Number of Responses		Extremely Positive		Very Positive		Positive		Somewhat Positive		Not at All Positive	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Not Available	185	30	33	18	72	39	54	29	23	12	3	2
Available Did Not Use	97	16	23	24	34	35	27	28	13	13	0	0
Used Some	170	27	43	25	74	44	36	21	16	9	1	1
Used Significantly	152	25	40	26	72	47	27	18	12	8	1	1
Non-Response	16	3	3	19	8	50	4	25	1	6	0	0

Note. $N = 632$. **Not significant*, $\chi^2 = 17.535$, $df = 16$. Percentages do not total 100% due to rounding or non-responses.

Table 20

*Comparison of Teaching Experience and Use of Peer Support Group**

Use of Peer Support Group	Number of Responses		Extremely Positive		Very Positive		Positive		Somewhat Positive		Not at All Positive	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Not Available	232	37	45	19	83	36	69	30	33	14	2	1
Available Did Not Use	105	17	22	21	48	46	25	24	9	9	1	1
Used Some	176	28	47	27	81	46	38	22	9	5	1	1
Used Significantly	91	14	26	29	37	41	15	16	12	13	1	1
Non-Response	16	3	2	13	11	69	1	6	2	13	0	0

Note. $N = 632$. *Significant at $p < .05$, $\chi^2 = 27.780$, $df = 16$. Percentages do not total 100% due to rounding or non-responses.

Table 21

*Comparison of Teaching Experience and Use of Orientation to Policies and Procedures**

Use of Orientation to Policies and Procedures	Number of Responses		Extremely Positive		Very Positive		Positive		Somewhat Positive		Not at All Positive	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Not Available	96	15	19	20	30	31	28	29	17	18	2	2
Available Did Not Use	135	22	13	10	61	45	41	30	19	14	1	1
Used Some	266	43	63	24	112	42	65	24	25	9	1	0
Used Significantly	109	18	45	41	49	45	12	11	2	2	1	1
Non-Response	14	2	2	14	8	57	2	14	2	14	0	0

Note. $N = 632$. *Significant at $p < .05$, $\chi^2 = 59.700$, $df = 16$. Percentages do not total 100% due to rounding or non-responses.

Table 22

*Comparison of Teaching Experience and Use of Paid Curriculum Development**

Use of Paid Curriculum Development	Number of Responses		Extremely Positive		Very Positive		Positive		Somewhat Positive		Not at All Positive	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Not Available	432	70	91	21	173	40	110	25	53	12	5	1
Available Did Not Use	54	9	12	22	20	37	18	33	4	7	0	0
Used Some	67	11	17	25	33	49	12	18	5	7	0	0
Used Significantly	42	7	20	48	17	40	4	10	1	2	0	0
Non-Response	25	4	2	8	17	68	4	16	2	8	0	0

Note. $N = 632$. *Significant at $p < .05$, $\chi^2 = 35.146$, $df = 16$. Percentages do not total 100% due to rounding or non-responses.

Table 23

*Comparison of Teaching Experience and Use of On-Site Certification Courses**

Use of On-Site Certification Courses	Number of Responses		Extremely Positive		Very Positive		Positive		Somewhat Positive		Not at All Positive	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Not Available	446	72	97	22	178	40	113	25	54	12	4	1
Available Did Not Use	66	11	15	23	30	45	17	26	3	15	1	2
Used Some	53	9	16	30	22	42	12	23	3	6	0	0
Used Significantly	27	4	11	41	12	44	1	4	3	11	0	0
Non-Response	28	5	3	11	18	64	5	18	2	7	0	0

Note. $N = 632$. *Not significant, $\chi^2 = 22.776$, $df = 16$. Percentages do not total 100% due to rounding or non-responses.

Table 24

*Comparison of Teaching Experience and Use of Tuition Assistance**

Use of Tuition Assistance	Number of Responses		Extremely Positive		Very Positive		Positive		Somewhat Positive		Not at All Positive	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Not Available	415	67	88	21	166	40	105	25	52	13	4	1
Available Did Not Use	58	9	12	21	30	52	11	19	4	7	1	2
Used Some	55	9	13	24	25	45	15	27	2	4	0	0
Used Significantly	69	11	25	36	26	38	13	19	5	7	0	0
Non-Response	23	4	4	17	13	57	4	17	2	9	0	0

Note. $N = 632$. *Not significant, $\chi^2 = 19.491$, $df = 16$. Percentages do not total 100% due to rounding or non-responses.

Likelihood to Continue Teaching

Fifty-three percent of the CTE teachers indicated that they plan to continue teaching for 8 or more years. Only 6% of the CTE teachers indicated they were actively considering a non-teaching job, and 3% indicated they plan to leave the teaching profession in the next 2 years (see Table 25).

Table 25

Teacher's Likelihood to Continuing in the Teaching Profession

Plans to Continue Teaching	*f*	%
I definitely plan to continue teaching as a long-term career (8 or more years)	332	53
I probably will continue teaching at least for a while (3 to 7 years)	186	29
I am actively considering a non-teaching job	37	6
I definitely plan to leave the teaching profession within a year or 2	18	3
I plan to retire	21	3
I am no longer teaching	19	3
Non-Response	19	3

Note. $N = 632$.

For research question 5, "Are differences reported among CTE teachers grouped according to their ratings of teaching experience and their reported likelihood to continue in the teaching profession?" A chi-square test for independence ($p \leq .05$) was used to analyze data using teaching experience rating (see Table 16) and likelihood of continuing in the teaching profession (see Table 25). Teaching experience rating and likelihood of continuing in the teaching profession yielded a significant difference ($p < .05$) (see Table 26).

Table 26

*Comparison of Teaching Experience and Intention to Continue Teaching**

Teaching Experience Rating	Number of Responses		Plan to Continue 8+ Years		Probably Continue 3 to 7 Years		Actively Considering Leaving		Will Leave in 1 or 2 Years		Retiring Soon		No Longer Teaching	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Extremely Positive	141	23	104	73	27	19	1	1	3	2	5	4	1	1
Very Positive	254	41	146	56	73	28	12	5	5	2	8	3	10	4
Positive	146	24	62	42	58	39	11	7	4	3	6	4	5	3
Somewhat Positive	64	10	17	26	25	38	13	20	5	8	2	3	2	3
Not at All Positive	5	1	1	20	2	40	0	0	1	20	0	0	1	20
Non-Response	3	1	2	17	1	8	0	0	0	0	0	0	0	0

Note. $N = 632$. *Significant at $p < .05$, $\chi^2 = 86.247$, $df = 25$. Percentages do not equal 100% due to rounding. Number of responses vary due to non-responses to some questions.

The sixth research question was, "Are differences reported among CTE teachers grouped according to teacher certification program in their likelihood to continue in the teaching profession?" A chi-square test for independence ($p \leq .05$) was used to analyze data by type of teacher certification program (see Table 7) and likelihood to continue in the teaching profession (see Table 25). There was no difference reported among type of teacher certification program and likelihood to continue in the teaching profession (see Table 27). Thus, the type of teacher certification program completed may not influence a teacher's decision to remain in the teaching profession. Over 50% of all respondents, regardless of type of teacher certification program completed, indicated they plan to continue teaching for 8 or more years.

Table 27

*Comparison of Teacher Certification Program and Intention to Continue Teaching**

Certification Program	Number of Responses		Plan to Continue 8+ Years		Probably Continue 3 to 7 Years		Actively Considering Leaving		Will Leave in 1 or 2 Years		Retiring Soon		No Longer Teaching	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Baccalaureate	287	47	148	52	84	29	24	8	9	3	11	4	11	4
Fifth-Year	108	18	59	55	39	36	5	5	3	3	0	0	2	2
Alternative	178	29	103	58	52	29	7	4	4	2	8	4	4	2
Other	21	3	11	52	6	29	0	0	1	5	1	5	2	10
Non-Response	19	3	11	58	5	26	1	5	1	5	1	5	0	0

Note. $N = 632$. *Not significant, $\chi^2 = 18.379$, $df = 20$. Percentages do not total 100% due to rounding. Number of responses vary due to non-responses to some questions.

Telephone Interview Results—Career and Technical Education Teachers

Telephone interviews were conducted with 14 individual CTE teachers from across the country. (See Appendix VII for the telephone interview questionnaire.) The interview data reflected and expanded upon the survey results from state departments of education and CTE teachers. The comments from the telephone interview respondents provided additional insight into the varied experiences of recently certified CTE teachers. Of the 14 respondents, 11 said they taught in rural areas. Two reported teaching in urban areas, and one in a suburban area. When asked why they decided to become a teacher (question 1), the intrinsic rewards of teaching were most often cited—by 8 of the 14 respondents. Three respondents said they were looking for a career change.

Certification Experiences

Respondents were asked if they had completed all the requirements for teacher certification for their state when they began teaching (question 2). Of the 14 respondents, 8 reported that they had completed all requirements before beginning teaching, and 6 said they had not. At the time of the telephone interviews, those respondents who had indicated they had not

completed the requirements at the time they began teaching had since completed all the requirements.

Respondents were asked what type of teacher certification program they completed (question 3) and whether their teacher certification program was well designed to meet their needs (question 4). Of the five who had a baccalaureate degree in education, three said "yes" and two said "somewhat." One respondent indicated completion of a post-baccalaureate program, and said "no." Of the two who said they went through an alternative certification program, one said "yes," and one said "no." Two respondents described their teacher certification program as "other," one said, "somewhat," and one said "yes." Four of the respondents did not indicate type of teacher certification program completed, but two said "somewhat," and two said "no" as to whether their teacher certification program was well designed to meet their needs.

Asked whether their current teaching license was regular, provisional, emergency, or another type (question 5), six teachers reported regular, six provisional, and two another type. The other types were reported as a temporary license and a professional license.

Suggestions for Improvement of Teacher Certification Programs

Almost all respondents mentioned one or more areas in which they felt their teacher certification program could have been improved. Areas needing improvement included dealing with special needs students, designing curriculum, planning units, managing budgets, purchasing, dealing with school administration, managing classrooms, and dealing with student discipline. Also noted was the need for more hands-on learning. One alternatively certified CTE teacher who was previously certified in another area answered "no" and said:

> What I needed more than anything else was a lot of hands-on learning in technical subjects, and we got very, very little of that. It was a good thing that they had the program available, but it just seemed like an awful lot of classes that we had to take and it cost a lot of money and then you get to school and you start teaching and you didn't learn anything that you needed to know and you still had to go back and learn physics and electronics and home building and woodworking that you had to teach. I want to say that I had to take about 27 hours for that certification, but it doesn't seem right.

The First Year of Teaching

Feelings about their first year of teaching (question 6) were either somewhat positive (six respondents) or very positive (eight respondents). Those reporting their experience as very positive noted good experiences with students. Those rating their experience as somewhat positive noted some negative experiences including feeling overwhelmed, having too much paperwork, and experiencing conflict with another teacher. An alternatively certified teacher who rated teaching experience as somewhat positive said:

> You had the other staff members to go to which was actually really helpful, but it would have helped if you could team teach with somebody or there was some other device to

> help you get started. Basically, I came on board three days before school started. That made it quite different. Basically, you're just supposed to take the ball and run with it and there was not a lot of material there. There were worksheets and things like that, but as far as notes for discussion in class, there was none.

Respondents were asked to think back to their first year of teaching and assess the adequacy of their preparation in four areas: classroom management, curriculum content, teaching methods, and dealing with special populations (question 7). Related to classroom management, those who felt well prepared cited practical instruction and hands-on experience, or their own prior work experience, as most helpful. One respondent who felt "somewhat" adequately trained in classroom management said, "I wasn't prepared for all types of kids, but it was not a bad experience." Those who felt well prepared in the area of curriculum noted up-to-date curriculum, previous experience, and student teaching as helpful. Those who felt less well prepared cited their need to teach classes for which they were not prepared at all, or noted the need to know more about technology. Concerning teaching methods, most felt well prepared by their program's methods classes. A few said their program was weak, or that some of the training they received after they started teaching should have been provided before they started. On the whole, the respondents felt the least prepared in the area of special needs. Seven of the respondents said they were not sufficiently prepared, citing too little coverage of material and lack of practical advice or hands-on experience. Of those who felt prepared, some cited their prior work experience as the primary factor.

When asked how they worked through the challenges of their first year (question 13), teachers expressed two contrasting themes. Many mentioned the help they received from veteran teachers and peers, but many others talked about working things out on their own, through trial and error, journaling, reflection, problem solving, or perseverance. One traditionally certified teacher said:

> I talked to my wife who is a teacher. I would talk to my principal, and I would talk to my mentor teacher. I also figured out by watching and listening to the teachers who have been in our school for a long time and I would visit with them and get their feedback and talk with them about certain problems I was having and then I also talked to other teachers and I was real lucky—I have two aides and one of my aides had been there a few years and they [my aides] gave me a lot of invaluable information. I also talked to university professors. One of my professors at the time in one of my vocational courses was the head of the Voc Ed program at the university I was attending and she gave me a lot of advice. And I searched the Web and used the Internet a lot.

Another traditionally certified teacher focused on the individual approach:

> Problem solving is what it boils down to. You have to break that down into steps that build up to that outcome. I made out goals of what I wanted to accomplish that year, not just my own professional use, and how I was going to run my class, what I wanted kids to learn, how I wanted to work with students. I had goals set up for all that plus the FFA and it's keeping a focus on those goals and when times are tough pulling out that sheet and saying "Where am I going here?" Saying, "OK, this is where I am going, but how am

> I going to get there?" That really helps bring the problem into perspective and makes the big problem a lot smaller. It takes progressive steps to building whatever you are trying to build and solve whatever needs to be solved.

Views of Effective Teachers

Teacher certification, whether traditional or alternative, seeks to assure the effectiveness of new teachers as they enter the classroom. Asked about the characteristics of effective teachers (question 11), respondents noted several themes. Effective teachers are lifelong learners, they said, who remain interested in the material they teach and who pursue all kinds of learning opportunities, often on their own time. They vary their instructional methods, try out new ideas, and work hard to reach every student, including those with special needs. They maintain a good rapport with students, and have a personal interest in their success. In addition, they have excellent classroom management skills and are well organized. One respondent said:

> They're always attending seminars or professional development. They are always learning new techniques and they try them on their students. Some of them are teaching at the community college or local 4-year institution. But they are always learning. They have committed themselves to being lifelong learners. They don't get in a rut.

Another respondent said:

> Their passion for teaching. Students can spot a fake and students can spot a teacher who is just putting in time, but if teachers have enthusiasm and have a love for their discipline and have an ability, whether it's from their personal experience or broad knowledge, then they can bring a real world situation into the classroom or take the classroom into the real world – those teachers are successful.

Professional Development Support

When asked what professional development activities were available to them as beginning teachers (question 8), almost all said some kind of professional development was available. Most often mentioned were district programs for new teachers, some of which included information on working with a mentor, classroom management, or district history and services available. Another source of professional development was local CTE or Tech Prep program offices, which offered workshops especially targeted at CTE teachers. Some had informal support even though there was no program in place. One person who had completed a fifth-year program said, "I was fortunate enough that I did have a good administrator—a principal—and I could certainly go to her whenever I had any questions or anything, but no other specific [assistance was available] through professional development." No respondents mentioned state-sponsored professional development activities.

When asked whether a mentor was available to them during the first year of teaching (question 9), eight respondents said yes, and three respondents said informal assistance was available. Only three respondents said they did not have any mentoring available. While most of those with mentors said they were helpful, others said that contact was too infrequent, the

mentor was not in their teaching content area, or the program seemed to exist mostly on paper. A traditionally certified teacher who reported having a mentor said:

> He was really helpful during my first year of teaching. If I had any problems or any questions during my first year about paperwork, requisitions, or problem students, I could go to his room, which was right across the hall from mine, and ask him questions at any time and he would give me a lot of good advice, e.g., how the principal likes things done, how the director likes things done. I became a VICA advisor my first year and he helped me a lot with that.

When asked how professional development for beginning teachers might be improved (questions 10 and 14), respondents offered a broad range of suggestions. They noted the need for more practical and in-depth pre-service training, including more and earlier opportunities for classroom experience. First-year induction and professional development programs were recommended, including the need for more workshops. Some thought it would be helpful if attendees could earn college or university credit for attending these programs. Curriculum planning and working with special needs students were identified as useful content areas. Several mentioned the usefulness of mentors and also the need for more opportunities to observe other teachers. Suggestions concerning mentoring programs included having a mentor in one's own area and having a mentor outside one's building. There was disagreement over whether a mentor should be a peer or be someone in a leadership position, such as a department chair. Also mentioned were a desire for more opportunities to communicate with peers and a need for more technology training and experience in the business world. One respondent said:

> I feel very strongly that we should have idea-sharing or brainstorming meetings with teachers that are in our same content area. That could be first-year teachers and veteran teachers because I think it would help both of them. But just in talking to other people that teach business at other schools, I get some of my best ideas just from conversations like that.

Respondents were asked to name three things that would help them improve their practice as a teacher in the coming years (question 12). Most frequent answers were peer coaching and networking, up-to-date technology and computer skills, and workshops or instruction on topics including curriculum development and special populations.

Research question 7 of this study asked, "What are the professional development needs of recently certified CTE teachers?" Responses to the interview questions summarized above would indicate a wide range of professional development needs. Depending on the quality of their pre-service preparation, some recently certified teachers will need ongoing help with curriculum, teaching methods, and classroom management. Interview respondents said they could benefit from support in the area of working with special needs students. The need for personal support, whether in the form of a mentor or a peer support group, was clear in the comments of the respondents. This support from other education professionals was seen as key, although there were various views on what, specifically, would be most helpful. Beginning teachers also valued the availability of classroom observation opportunities and workshops on many topics, along with the time available to take advantage of these.

CONCLUSIONS

Several findings emerged from this study about alternative teacher certification procedures and professional development opportunities for recently certified academic and CTE teachers. Of the states providing data ($N = 36$), similar alternative teacher certification routes were reported for secondary academic teachers and CTE teachers. Class I (no alternative routes available) and Class J (intended to eliminate emergency routes) were reported as the least often used alternative teacher certification classes for secondary academic teachers and CTE teachers. Alaska and Montana were the only states reporting no alternative teacher certification routes, for either secondary academic teachers or CTE teachers.

A review of state documents and web sites, along with responses to queries made to state departments of education, supports earlier claims that state certification policies vary significantly among states (Goldhaber & Brewer, 2001) and that most states have multiple options available for teachers to seek certification (Noell, 1998). States varied in reporting from one to nine alternative certification classes available to individuals seeking a teaching license. In most cases, the classes of alternative certification (Feistritzer & Chester, 2000) available for secondary academic teachers were also available for the majority of CTE certification areas. Several states reported additional professional experience requirements for trade and industrial teachers.

The present study asked CTE teachers whether, at the time they began teaching, their requirements for teacher certification had been completed. Of the CTE respondents, 59% had completed all the requirements when they began teaching, and 38% had not completed the requirements when they began teaching. These results are consistent with previous research that reported many CTE teachers lacked full certification at the time they began teaching (Lynch, 1996; National Center for Education Statistics, 1998; Noell, 1998).

More than half of the agriculture (58%), health careers (65%), and trade and industrial (59%) teachers reported that at the time they began teaching, they had not completed all the requirements for teacher certification. Lynch (1997) reported wide variation in the methods used to certify CTE teachers. Often, occupational experience has served as an alternative certification route for health and trade and industrial teachers. It appears that this certification route continues to be widely available.

CTE teachers with different types of certification programs completed (baccalaureate degree in education, fifth-year or post-baccalaureate program, and alternative certification program) reported differences in the pre-service preparation areas of pedagogy and knowledge of subject matter. In pedagogy, teachers with a baccalaureate degree in education felt the most prepared, and alternatively certified teachers felt the least prepared. Subsequently, in knowledge of subject matter, alternatively certified teachers felt the most prepared.

Importance of pre-service preparation is supported by the four current national initiatives for improving teacher preparation (AACTE, INTASC, NBPTS, and NCATE). Each of these approaches has standards or components that address teaching competence. According to Ingersoll (1999), teaching requires expertise in knowledge of subject matter, pedagogy, and skill

in teaching. Findings from this study indicate that most teachers believe their pre-service training provided them with sufficient knowledge of their subject area. Telephone interview data and survey data from CTE teachers revealed that recently certified CTE teachers felt least prepared by their pre-service preparation in the area of working with special needs students. CTE teachers frequently mentioned in the telephone interviews their need for professional development in the areas of classroom management and technology.

Teachers who reported using four types of support services—curriculum and instruction resources, orientation to school's policies and procedures, paid curriculum development prior to teaching, and a peer support group—rated their teaching experience more positively than those who did not use those support services. It is not clear why use of these support services was related to teaching satisfaction, as those not using the support services may have had less need for them. However, those who had the services available to them and used them may have had better skills, resources, and preparation than those who did not.

Another finding emerging from this study concerns mentoring. Mentoring was the professional development practice most frequently made available by state departments of education and most often used by CTE respondents. Sixty-seven percent of state departments of education reported that new teachers in their state were provided a mentor as part of their professional development activities, and 66% of the CTE survey respondents reported that mentors were provided to them as a recently hired CTE teacher. Fifty-one percent of CTE survey respondents reported using a mentor during their first 6 months of teaching. However, when CTE respondents were asked to rate how important the availability of a mentoring program was to their decision about continuing to teach, it is interesting to note that 31% responded "not important." Those responding "not important" may have found a previous mentoring experience unhelpful, or, because of previous experience in teaching, they may have viewed a mentor as not important or not critical to remaining in the profession. It is also possible that those who had a good relationship with their mentor found the relationship more helpful than did those who did not have a good relationship with their mentor. The study did not probe the reasons behind these responses.

Most telephone interview participants who had a mentor viewed mentoring programs as helpful. Telephone interview data suggested that the design of the program and the selection of the mentors are important to the success of such a program. Having supervisors serve as mentors works for some, but appears to be a less accepted strategy overall. Experienced, accessible peers in the same field appear to be helpful and successful as mentors.

Providing a mentoring program is in keeping with previous research conducted by Kirby and LeBude (1998) and the Texas State Board for Educator Certification (1998). They concluded that the inclusion of a mentor as part of an induction program resulted in a higher than expected retention of teachers and greater student academic attainment.

Yet another conclusion drawn from this study is that teachers who rate their first year of teaching more positively are more likely to indicate they intend to remain in the teaching profession. Sixty-three percent of the CTE respondents rated their teaching experience as very positive or extremely positive. In addition, rating of teaching experience and likelihood to

continue in the teaching profession were related. This reported importance of a positive teaching experience to retention is similar to findings in past research. Ruhland (2001) reported a positive teaching experience as a main reason reported by teachers for remaining in the teaching profession.

The reported likelihood of remaining in the teaching profession did not vary based upon type of teacher certification program. Whether a CTE teacher participated in a baccalaureate degree in education, fifth-year or post-baccalaureate program, or alternative certification program, 53% of CTE respondents reported they planned to continue teaching as a long-term career (8 or more years). Only 9% of the CTE respondents reported they were actively considering a non-teaching job or otherwise planning to leave the teaching profession.

Summary of Conclusions

This study differs from past research in that it focused to a considerable degree on alternative certification procedures for recently certified CTE teachers. Results reported similar alternative teacher certification routes for secondary academic and CTE teachers. CTE teachers reported differences with type of CTE certification program completed and two pre-service preparation areas (pedagogy and knowledge of subject matter). CTE teachers who used four support services (curriculum and instruction resources, orientation to policies and procedures, paid curriculum development prior to teaching, and a peer support group) reported a more positive first year teaching experience. There was no difference between type of certification program completed and likelihood to continue in the teaching profession.

These results will assist those responsible for state certification policy in reviewing existing procedures and modifying pre-service and in-service programs. It is anticipated that state departments of education will continue to confront new challenges as the availability of alternative certification routes increases.

SUMMARY

Policymakers, state departments of education, and schools and colleges of education providing teacher preparation programs must be responsive to alternative teacher certification procedures that assure that teachers are prepared to enter the teaching profession. Findings from this research study indicate a need for more collaborative efforts with stakeholders to provide and prepare teachers with ongoing professional development opportunities. The following is a summary of the major findings of this study:

1. The alternative certification routes reported are similar for secondary academic and CTE teachers. As with academic teachers, Class C (which reviews academic and professional background and transcripts of the individual seeking certification) was the most frequently reported alternative teacher certification class for six of the eight CTE certification areas.

2. Professional development practices and support from state or local school districts vary for traditionally and alternatively certified teachers among individual states. Mentoring (67%) was the most frequent state-wide professional development practice provided to new teachers. Half of recently certified CTE teachers (51%) reported the availability of and use of a mentor during their first 6 months of teaching.

3. An alternative certification program was completed by 28% of the CTE teachers, of which 52% had completed at least a bachelor's degree. The majority of CTE teachers for agriculture (56%), health careers (52%), and trade and industrial (46%) reported completing an alternative certification program.

4. The majority of CTE teachers (59%) had completed all the teacher certification requirements at the time they began teaching. Agriculture (58%), health careers (65%), and trade and industrial (59%) teachers reported they had not completed all the teacher certification requirements at the time they began teaching.

5. Pre-service preparation in the areas of pedagogy (64%), knowledge of subject matter (91%), and classroom management skills (57%) were rated as moderately to very adequate in pre-service preparation. Strategies for working with special needs students (40%) was rated as somewhat adequate by recently certified CTE teachers.

6. Support services available and used during the first 6 months of teaching by over 50% of the recently certified CTE teachers included curriculum and instructional resources (72%), teacher handbook (60%), orientation to school's policies and procedures (59%), and mentor (51%).

7. CTE teachers reporting a very positive to extremely positive (63%) teaching experience were more likely to continue in the teaching profession.

8. The type of certification program completed did not influence a CTE teacher's likelihood to continue in the teaching profession.

9. CTE teachers who participated in the telephone interview indicated a wide range of professional development needs, including peer-coaching, up-to-date technology and computer skills, and workshops on curriculum development and working with special needs populations.

Recommendations for Further Research

Based upon the findings from this study, and previous research reviewed, the following recommendations for further research are offered:

1. Research should be conducted to study the relationship between traditional versus alternative certification and student achievement. There is minimal research relating the type of teacher certification program to student achievement. With the increase in the number of states reporting alternative certification routes (Feistritzer & Chester, 2001), policymakers can better answer the question of whether more rigorous standards in teacher certification will lead to better student achievement.

2. Research should be conducted to examine the relationship between the mentor and the quality of the mentor program and its helpfulness to the beginning teacher. The telephone interviews revealed concerns regarding the processes used to select, train, and match a mentor with a beginning teacher.

3. A study should be undertaken to identify model CTE teacher preparation programs, including both traditional and alternative models. Analysis of candidate selection, program components, and delivery methods should provide helpful information and direction to other programs seeking improved outcomes.

4. Research should be conducted to determine the effectiveness of national programs offering alternative certification routes into the teaching profession (e.g., Teach for America). On a national level, the number and types of teacher preparation programs for individuals entering the teaching profession holding non-education baccalaureate degrees will continue to increase. These programs need to be designed to provide new teachers with the knowledge and skills needed to begin their teaching careers.

5. Continued research should be conducted to examine traditionally and alternatively certified secondary academic and CTE teachers to determine their pre-service and in-service program needs. As the types of alternative certification routes offered in states increases, local school districts, state education agencies, and colleges and universities need to work collaboratively to determine the content of pre-service and in-service programs provided to teachers.

6. A longitudinal study should be conducted to compare the likelihood of success in terms of traditionally and alternatively certified CTE teachers with varying levels of preparation. A study of this type would reveal concerns of traditionally and alternatively certified CTE teachers and provide guidance for potential teacher candidates.

7. State policymakers should review current research on certification and licensure requirements to seek consensus concerning what constitutes an effective licensure policy. Currently there is no single licensure system. A consensus on policy would enable future research to more accurately report and assess alternative teacher certification and its impact on quality in our classrooms.

8. State policymakers and licensing systems need to review the requirements for pedagogy, knowledge of subject matter, classroom management skills, and working with special needs populations. Reviewing and strengthening these requirements will encourage improvements in teacher preparation and assist with teacher accountability.

DISCUSSION

A wide range of alternative certification procedures exists across the United States. This lack of consistency may result in part from differing levels of teacher shortages, with more liberal or varied routes available where shortages are perceived as being more severe. Differing procedures may also result from experience, with states trying to prevent particular kinds of problems from recurring. In general, alternative certification procedures do not vary greatly between secondary academic and CTE teachers.

Professional development opportunities should be available to all beginning CTE teachers. Currently state departments of education provide professional development programs at various levels. Some provide state-wide funding; in other states, professional development programs are optional and not funded at the state level. Whether such programs are delivered state-wide or locally, states should assure the availability of such opportunities with mandates and funding.

Similar types of professional development opportunities are equally available to recently certified secondary academic and CTE teachers. CTE teachers in this study from all types of certification backgrounds reported feeling well prepared to enter the classroom. Some credited prior experiences, others their preparation program, and still others a combination of the two. This suggests there are good model programs of all types to be studied and perhaps replicated.

Beginning CTE teachers need more thorough pre-service preparation and ongoing support in two key areas: classroom management and working with special needs students. Classroom management preparation will involve more hands-on experience and a thorough understanding of the types of students in today's classrooms. In the area of special needs, a course on working with special needs students would be helpful for new teachers. Teachers cited lack of sufficient preparation, minimal coverage of special populations in existing certification programs, and lack of hands-on experience.

The relationship between four types of support service used and rating of teaching experience suggests that some types of support services may be particularly valuable to the new teacher. Orientation to school's policies and procedures and the provision of curriculum and instructional resources provide key information needed by teachers. Paid curriculum development time prior to teaching allows the new teacher to enter the classroom prepared, and a peer support group addresses the need for practical and interpersonal day-to-day support. Each of these support services has the potential to have a positive impact both, short- and long-term. Of the remaining support services asked about in the survey of CTE teachers, three seemed less immediate in their potential impact: (a) teacher handbook, (b) on-site certification courses, and (c) tuition assistance for certification courses. Surprisingly, there was no difference between use of a mentor and positive rating of teaching experience. While the CTE teacher survey did not explore the mentoring relationship in depth, interview data suggest that the availability of the mentor and the quality of the mentoring relationship are key to the effectiveness of this support service.

New teachers who reported a more positive rating of their teaching experience also reported a greater likelihood of staying in the teaching profession. This result, while not surprising, suggests that schools and districts can improve retention of new teachers by actively addressing the support of new teachers, and by not assuming that new teachers will tolerate a difficult first year, common as that may be.

The finding that CTE teachers, whether certified through traditional, alternative, or fifth-year and post-baccalaureate programs, felt equally likely to remain in the profession suggests that concerns about the long-term commitment of alternatively certified CTE teachers may not be well-founded. An emphasis on adequate preparation so that the first year of teaching is a positive experience should help improve retention of all teachers, whatever their certification route.

CTE teachers, whether certified through traditional, alternative, or fifth-year and post-baccalaureate programs, reported similar concerns and needs for professional development. This suggests that neither traditional nor alternative certification programs can be counted on to fully prepare aspiring CTE teachers for the classroom. There will always be a need for professional development.

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Appendix I

State General Teacher Certification and Teacher Licensure Requirements[a]

Alabama

General Certification and Licensure Requirements

The initial teacher certificate of license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements equivalent to completion of a teacher preparation program at an institution in the United States.
- In addition, candidates must undergo a fingerprint check.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

Alabama allows a local board of education to employ an individual in cases of emergency when a teacher who holds a valid Alabama certificate is not available. This individual is issued an Emergency Certificate at the bachelor's degree level that expires at the end of the year for which it is issued and cannot be extended or renewed.

Alaska

General Certification and Licensure Requirements

The Type A Teacher Certificate is granted with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a teacher preparation program approved as substantially meeting NCATE standards; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a teacher preparation program approved as substantially meeting NCATE standards; or

[a] Noell, J. (1998). *The initial report of the secretary on the quality of teacher preparation.* Washington, DC: Office of Postsecondary Education.

- A post-baccalaureate program in professional education that is approved as substantially meeting NCATE standards.

In addition, candidates must undergo a fingerprint check, complete 6 semester hours or more quarter hours of course work taken within the 5 years immediately prior to the application date, and complete 3 semester hours of approved Alaska studies and 3 semester hours of approved multicultural education/cross-cultural communications.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

Alaska allows a school district to request the issuance of an Emergency Certificate that demonstrates it has been unable to fill a position with a qualified, certified person. This certificate expires at the end of the year for which it is issued.

Arizona

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, with specific credit-hour requirements for general and professional education course work; or
- A valid teaching certificate from any other state.

In addition, candidates must pass a state-prescribed assessment of basic skills, professional knowledge, and the appropriate subject-matter for certification. Candidates are also required to pass a college course or the appropriate examination for knowledge of both the Arizona Constitution and the U.S. Constitution.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

None.

Arkansas

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, with specific credit-hour requirements for general and professional education course work; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by the state through review and transcript analysis; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program; or
- A valid teaching certificate from a state with which Arkansas has a reciprocity agreement.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The Arkansas Department of Education reported the requested data were not readily available at the time of the initial questionnaire.

California

General Certification and Licensure Requirements

The Preliminary Credential Certification is valid for a maximum period of 5 years. The requirements to obtain the preliminary credential currently include the following elements:

- A bachelor's degree or higher, except in professional education, from a regionally accredited postsecondary institution;
- Completion of a state-approved teacher preparation program, including student teaching;
- Passing a state-prescribed assessment of basic skills in reading, writing, and mathematics—California Basic Education Skills Test (CBEST);

- Character and Identification Clearance from the California Department of Justice and the Federal Bureau of Investigation (through submission of fingerprint cards);
- A course examination in the provisions and principles of the U.S. Constitution;
- Developing English language skills, including reading requirement, by successful completion of a comprehensive reading instruction course that includes the systematic study of phonemic awareness, phonics, and decoding; literature, language, and comprehension; and diagnostic and early intervention techniques;
- Passing the Reading Instruction Competence Assessment for Multiple Subject Teaching Credential only; and
- Demonstrating subject-matter competency by either: (a) achieving a passing score on the appropriate subject matter examination(s) for the type and subject areas requested, OR (b) completing an appropriate Commission-accredited subject-matter program for the type and subject areas requested.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

California allows school districts to hire individuals to teach who have not yet completed the state licensure process. The Emergency Permit requires a bachelor's degree, passage of the basic skills test CBEST, and a statement of intent to complete the credential requirements and subject matter study. The credential waiver may waive any requirement based upon criteria established by the California Commission.

Colorado

General Certification and Licensure Requirements

The Provisional Teacher License is granted with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program; or
- A valid teaching certificate from a state with which Colorado has a reciprocity agreement.

In addition, candidates must undergo a fingerprint check or police record examination, and demonstrate oral English proficiency.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

Colorado issues a waiver upon request of a local school district when no fully qualified teacher is available for the position. The waiver is a 1-year Emergency Authorization and is renewable for additional 1-year terms.

Connecticut

General Certification and Licensure Requirements

The Initial Educator Certificate is granted with the fulfillment of the following conditions:

- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by the state through review and transcript analysis; or
- A post-baccalaureate program and completion of a state-approved teacher preparation program.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

Connecticut issues a Durational Shortage Area Permit to a school district based on a demonstrated shortage of certified persons. The candidate must be enrolled in a planned program leading to certification, have passed the Praxis I Computer-Based Test, and have accumulated a minimum of 12 semester hours of credit in the requested endorsement area. A bilingual deferral is also issued to a district under the same conditions. This deferral is valid for 2 years, during which prescribed courses in bilingual methodology and special education must be completed. The candidate must have earned the equivalent of a bachelor's degree, passed the Praxis I Computer-Based Test, and be bilingual.

Delaware

General Certification and Licensure Requirements

For regular certification, state teacher licensure and certification requirements currently include the following elements:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, with specific credit-hour requirements for general and professional education course work; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by the state through review and transcript analysis; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program.

In addition, candidates must undergo a fingerprint check or police record examination.

State Waiver Categories: Exceptions from Regular Certification and License Requirements

If an individual does not meet the Standard or the Limited Standard License requirements for a specific license and is hired after August 15 of the school year, the state of Delaware may issue them a Temporary License. This is a 1-year, nonrenewable license.

District of Columbia

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education or a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, with specific credit-hour requirements for general and professional education course work; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by the state through review and transcript analysis; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program; or

- A valid teaching certificate from a state with which the District of Columbia has a reciprocity agreement; or

- Demonstration of the acquisition of college-level learning through skills, knowledge, and competencies that are acquired from life experiences, as determined by portfolio analysis.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The District of Columbia Department of Education reported the requested data were not readily available at the time of the initial questionnaire.

Florida

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or

- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or

- A bachelor's degree in a subject area from an accredited postsecondary institution, with specific credit-hour requirements for general and professional education course work; or

- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program.

In addition, candidates must obtain a 2.5 grade point average on a 4.0 scale in each subject to be shown on a certificate; hold a valid Statement of Eligibility that reflects no deficiencies in specialization requirements; undergo a fingerprint check from the FBI and the Florida Department of Law Enforcement; obtain employment in a Florida public, state-supported, or nonpublic school that has an approved Professional Education Competencies Demonstration System; satisfy the recency of college credit or teaching experience requirements; and demonstrate professional education competencies by graduating from a Florida state approved teacher training program or by district verification of demonstration during the first year of employment.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Florida has no waiver of educator certification. School districts are permitted to place a teacher in an out-of-field assignment only if the teacher takes 6 semester hours of college credit toward the addition of the out-of-field coverage to the existing certificate. This requirement continues for each year there is such an assignment.

Georgia

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program.; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program; or
- A valid teaching certificate from a state with which Georgia has a reciprocity agreement.

In addition, candidates must complete course work in the identification and education of children with special education needs, meet a recency of study or experience requirement, and comply with the ethical standards of the profession for initial and continued certification. Course work in the teaching of reading is also required for the fields of Elementary Education, Early Childhood Education, Middle Grades, Mental Retardation, Learning Disabilities, Behavior Disorders, Interrelated Special Education, Interrelated Special Education/Early Childhood, and English.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

A description of waiver categories was not provided.

Hawaii

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or

- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program.

In addition, candidates must undergo a fingerprint check or police record examination and successfully complete a structured interview with an authorized professional staff interviewer.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

A description of waiver categories was not provided.

Idaho

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or

- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or

- A bachelor's degree in a subject area from an accredited postsecondary institution, with specific credit-hour requirements for general and professional education course work; or

- A valid teaching certificate from a state with which Idaho has a reciprocity agreement.

In addition, candidates must undergo a criminal history check, and must meet a recent academic credit requirement; an initial or reinstated Idaho credential can be held only if applicants have completed 6 semester credit hours (or 9 quarter hours) from an accredited college/university in the last 5 calendar years. Official transcripts verifying the credit must be provided with the application. Course work may be in any area and at any level except remedial courses.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Idaho offers school districts and individuals approval options for filling professional teacher positions. A Letter of Authorization Approval allows school districts to request emergency approval for an individual when a professional position cannot be filled with a certified person. It can be renewed annually with the satisfaction of credit hour requirements. A Consultant Specialist Letter of Approval is an emergency provision allowing a district to use a noncertified individual to work in a particular educational area. It is valid for 1 year and is not to

be used as a way of acquiring new subject matter endorsements nor in lieu of the misassignment process. A Misassignment Letter of Approval allows a certified teacher to teach in an area for which they do not possess a proper endorsement. The Alternate Route Program Letter of Permission allows an individual with a strong subject matter background who has not completed a teacher preparation program to become a certified secondary teacher without following standard program requirements. A Limited Transitional Letter of Permission is a 1-year letter of permission that allows a teacher with a Standard Secondary certificate to teach at the elementary level (or vice versa) without additional student teaching, however all other requirements must be met.

Illinois

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by the state through review and transcript analysis; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program; or
- A valid teaching certificate from a state with which Illinois has a reciprocity agreement.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

Illinois allows school districts to hire individuals without a particular subject-area certification, provided they have a Letter of Non-Jeopardization. Letters of Non-Jeopardization are valid for 1 year and may be issued to properly certificated individuals, allowing them to teach a subject for which they do not presently meet the qualifications, provided: (a) the school district documents the search for a qualified candidate; (b) the district has not RIFFED any qualified individual during the last year; (c) the teacher applies for endorsement and submits a remediation plan including the content, location, and timeline for completing the required course work.

Indiana

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by the state through review and transcript analysis; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program.

In addition, candidates must submit to a limited criminal history check from Indiana state police.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Indiana issues Limited Licenses upon the request of a district superintendent for teachers to teach outside of their subject area or to individuals who have a baccalaureate degree, but have not completed a teacher education program.

Iowa

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, with specific credit-hour requirements for general and professional education course work.

In addition, candidates must complete an approved human relations component, complete requirements for a teaching endorsement, and meet a recency requirement.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Iowa does not issue waivers. Iowa will issue a Conditional License to an individual who meets the minimum qualifications for an initial teaching license, but desires to add a

teaching endorsement for which they have only completed two-thirds (for regular education) or one-half (for special education) of the requirements. The individual then must follow a constructed program of study and must complete all requirements within a specified time period.

Kansas

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by the state through review and transcript analysis; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Kansas provides Quality Performance Accreditation waivers allowing an individual to teach for 1 year, off-level or outside of the certificate field, or when some elements are lacking a full endorsement.

Kentucky

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program; or

- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by transcript analysis; or

- A valid teaching certificate from a state with which Kentucky has a reciprocity agreement.

In addition, candidates must have a cumulative as well as an academic specialty GPS or 2.5 or higher, complete a 1-year internship, and pass state-prescribed assessments. Out-of-state applicants with valid licenses and 2 years of experience in the appropriate certification area do not have to complete the internship or testing requirements.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Kentucky offers a Full Emergency Certificate for an applicant who holds a bachelor's degree with a GPA of 2.5.

Louisiana

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program (regionally accredited); or

- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by the state through review and transcript analysis.

In addition, the individual must have earned a GPA of 2.5 on a 4.0 scale on all course work attempted.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Louisiana provides admission to the State Alternate Post-Baccalaureate Certification Program for individuals who have earned a baccalaureate degree and a GPA of 2.5. The individual must complete the program and meet the state certification and licensure requirements.

Maine

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in a subject area from an accredited postsecondary institution, with specific credit-hour requirements for general and professional education course work.

Effective July 1, 2000, candidates must undergo a fingerprint check or police record examination.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Maine allows waivers to be granted for a limited time in a subject area required by statute or rule, provided the individual on the waiver is taking courses toward full certification. The superintendent determines the need, based on difficulty experienced in hiring individuals.

Maryland

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, with specific credit-hour requirements for general and professional education course work; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by the state through review and transcript analysis; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program; or
- A valid teaching certificate from a state with which Maryland has a reciprocity agreement.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Maryland allows an individual who holds a bachelor's degree but has not met the requirements for a Professional Certificate to be hired by the local school system with a Provisional Degree Certificate. The applicant must then acquire the necessary course work or achieve the qualifying scores on required assessments. The length of time for the certificate is dependent upon the requirements that remain to be fulfilled. In addition, a Provisional Nondegree Certificate may be issued upon the request of a local superintendent to an applicant who is hired by the local school system in a vocational education area for which a bachelor's degree is not required, so long as professional requirements other than the degree are met.

Massachusetts

General Certification and Licensure Requirements

The Provisional Certificate is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in arts or sciences from an accredited postsecondary institution, 24 credit hours in the subject matter for the certificate, and completion of a state-approved teacher preparation program that includes 18 credit hours in professional education course work and a credit-bearing, supervised practicum at either the baccalaureate or post-baccalaureate level; or

- A bachelor's degree in arts or sciences from an accredited postsecondary institution, with 24 credit hours in the subject matter for the certificate and 18 credit hours of professional education course work that includes a credit-bearing, supervised practicum; or

- A degree from a non-U.S. institution equivalent to a bachelor's degree in arts or sciences, including the above subject matter and professional education requirements as determined through transcript analysis.

In addition, candidates must pass the Massachusetts Educator Certification Tests and demonstrate evidence of sound moral character.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Massachusetts offers school districts the option of a waiver as a 1-year authorization to hire an educator who is not appropriately certified, upon demonstration that a hardship exists in securing certified personnel. In addition, a Provision Certificate is awarded to candidates who hold a bachelor's degree in arts or sciences or an interdisciplinary major, passes the Massachusetts Educator Certification Tests, and presents evidence of sound moral character. This certificate is valid for 5 years of employment and is not renewable.

Michigan

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education or a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by the state through review and transcript analysis; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program; or
- A valid teaching certificate from a state with which Michigan has a reciprocity agreement.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Michigan allows a person who does not hold a valid Michigan teacher certificate or a certificate appropriate to their assignment a Full-Year Permit valid for teaching in the grade and/or subject specified for 1 year. The Emergency Permit is issued only in situations that qualify as an "emergency" because the lack of a teacher will deprive children of an education. To qualify for these permits, individuals must meet degree, specialization, and experiential requirements established by the state.

Minnesota

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by the state through review and transcript analysis.

In addition, candidates must undergo a fingerprint check.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Minnesota will grant a Variance to a school district to hire a teacher licensed in an area other than the proposed teaching assignment. The district must assure there is no licensed teacher available and that the individual holds a current license in an area other than the proposed teaching assignment. In addition, the district can request board actions for a Waiver and the Non-Licensed Community Expert. A waiver from rule is requested when an experimental or innovative program design requires using teachers in an assignment that is inconsistent with the current rule. A Non-Licensed Community Expert has expertise in a specialized area, but does not meet the state requirements for certification.

Mississippi

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by the state through review and transcript analysis; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program; or
- A valid teaching certificate from a state with which Mississippi has a reciprocity agreement.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Mississippi allows Special Emergency Educator Licenses to be issued for individuals who presently hold a standard license. The school district must submit a Local District Request Packet for this license, and individuals who do not hold a Standard License must provide the local district with supplemental documentation in support of the request.

Missouri

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or

- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or

- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program.

In addition, the individual must have an overall grade point average of 2.5, with no grade lower than a C in professional education courses; the applicant also must be recommended by the designated official for teacher education in the college/university where the program was completed.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Missouri does not grant waivers under its current policies. Provisional Certification is issued to applicants who are current teachers and are seeking additional certification areas in which they are 12–14 credit hours away from completing the requirements for Full Certification.

Montana

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or

- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or

- A valid teaching certificate from a state with which Montana has a reciprocity agreement is honored if that state's approved program was completed.

In addition, candidates must earn a minimum grade point average of 2.0 on a 4.0 scale, or a "C" average.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Montana does not permit waivers for teaching outside of "appropriate assignment" as identified in accreditation standards. Class 5 Provisional Certification is available for those who have not completed a full teacher preparation program but who meet the academic requirements for teaching within a field of study. The requirements must be met within 3 years.

The school district may also employ individuals with an Emergency Authorization of Employment, after demonstrating they have advertised widely but have not had a fully qualified applicant for the position. Those employed under this provision must have held certification at one time or hold a bachelor's degree in a related field, and must then complete minimum requirements or education courses to complete the pedagogical portion of certification requirements.

Nebraska

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by the state based on independent review by a commercial transcript analysis agency.

In addition, candidates who have not been Nebraska residents for the previous 5 years must undergo a fingerprint check or police record examination, meet Human Relations Training and Special Education Competencies, meet a recency requirement, and be recommended by a state institution.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Nebraska offers the following options that allow individuals failing to fulfill all requirements to teach: (a) a Provisional Teaching Certificate may be issued to individuals who have a bachelor's level degree, but lack either completion of the teacher education phase or the recency requirement; (b) a Temporary Teaching Certificate may be issued to persons who are fully trained as teachers, but lack up to three of the "statutory" provisions (basic skills test, human relations training, or special education competencies); (c) a Conditional Permit may be issued to a person who has met all requirements for a teaching certificate, but for whom the Nebraska State Patrol or the FBI have not issued a final report on the criminal background (fingerprinting).

Nevada

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program; or
- A valid teaching certificate from a state with which Nevada has a reciprocity agreement.

In addition, candidates must undergo a fingerprint check or police record examination.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Nevada regulations provide a description for Emergency Relief from regulations.

New Hampshire

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by the state through review and transcript analysis; or
- A valid teaching certificate from a state with which New Hampshire has a reciprocity agreement.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The New Hampshire Department of Education reported the requested data were not readily available at the time of the initial questionnaire.

New Jersey

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree from an accredited college or university; or
- A bachelor's degree in the liberal arts or sciences for elementary education; or
- A bachelor's degree in the subject teaching field; or
- Successful completion of either the Provisional Teacher Program—Alternate Route, or completion of a state-approved college teacher training program and 1 year of full-time teaching under a valid Provisional License, or completion of a state-approved college teacher training program and 1 year of full-time teaching under a valid out-of-state license.

In addition, candidates must be U.S. citizens.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of New Jersey offers Emergency Licensure to teachers teaching English as a Second Language, Bilingual/Bicultural Education, and Special Education. These licenses are issued at the request of the hiring district after providing evidence that it has properly advertised for the vacancy and no suitable licensed teacher applied for the position. These licenses expire in July of the academic year in which they are issued and the emergency licensed teacher is expected to complete academic study aimed toward completing all requirements for full licensure.

New Mexico

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area and completion of a state-approved teacher preparation program; or
- A valid teaching certificate from a state with which New Mexico has a reciprocity agreement.

In addition, candidates must pass a state-prescribed assessment and undergo a fingerprint background check.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of New Mexico allows school superintendents to employ individuals who have not completed some or all of the specific licensing requirements for the type of license sought. This 1-year Emergency License requires that an individual remove any deficiencies while teaching. In addition, a school superintendent may employ an individual with a valid New Mexico teaching license for the grade level being taught but who is assigned to teach a subject for which there is no current endorsement. The teacher is granted a Waiver of Assignment and must remove any deficiencies while teaching.

New York

General Certification and Licensure Requirements

The Provisional Certificate is granted with the fulfillment of the following conditions:

- A bachelor's degree in a subject area, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area, and the completion of specific credit-hour requirements for general and professional education course work; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by the state through review and transcript analysis; or
- A valid teaching certificate from a state with which New York has a reciprocity agreement.

In addition, for a Provisional Certificate, candidates must pass a state-prescribed assessment, have U.S. citizenship status, have good moral character, and attend a Child Abuse Workshop.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of New York will issue a Temporary License, valid for 1 year, to employ an uncertified teacher when no certified and qualified teacher is available after documented recruitment. The uncertified person must have the minimum degree required in the certification area, and must be enrolled in a collegiate program leading toward certification by the beginning of the semester following initial employment. Twenty percent of the uncertified teacher's assignment will be used for planning, preparation, and training. The uncertified teacher will work under the guidance of a person who does hold a permanent teaching certificate. New York also allows certified teachers to teach outside of their current subject certification, based on an Incidental Teaching Assignment. The period of incidental teaching must not exceed 5 classroom hours per week.

North Carolina

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree from an accredited postsecondary institution, and completion of a state-approved teacher preparation program;
- Satisfactory performance on NTE/Praxis exams.

In addition, candidates must have a recommendation from the Local Education Agency in which student teaching was completed (for in-state program completers), a recommendation from the institution of higher education, and complete a technology portfolio and the Essential Technology Skills Inventory (for in-state program completers).

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of North Carolina allows skilled individuals outside of the public education system to be employed as a teacher while completing an approved teacher education program with a Lateral Entry License. The initial Lateral Entry License is valid for up to 2 school years and can be extended for up to 3 years if the holder earns a minimum number of semester hours of credit per year. In addition, Provisional Licenses for Out-of-Field Assignments can be requested by the employing school system. Issued for 1 year, the Provisional License requires the holder to complete prescribed course work and meet any other requirements, which must be completed within 5 years of the first effective date of the license.

North Dakota

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area along with the completion of a state-approved teacher preparation program; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by the state through review and transcript analysis; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program.

In addition, an individual must undergo a fingerprint check or police record examination, have a grade point average of 2.50 or above, and have three positive recommendations from the institution.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of North Dakota grants Interim Certificates in cases where schools have documented a shortage of regularly certified teachers and a diligent effort to attract and hire regularly certified teachers.

Ohio

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, and including general and professional education requirements, as determined by the state through review and transcript analysis; or

- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, with specific credit-hour requirements for general and professional education course work; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program; or
- A valid teaching certificate from a state with which Ohio has a reciprocity agreement.

In addition, an individual must undergo a fingerprint check or police record examination, pass state-prescribed course work, and complete the Entry Year Mentoring Program.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The Ohio Department of Education issues Temporary Certificates to school districts if a fully certified teacher is not available, however; to teach out-of-field full-time, the person must hold certification in another area and have 20 semester hours of course work in the out-of-field area.

Oklahoma

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree from an accredited postsecondary institution, with specific credit-hour requirements for general education, professional education, and subject specialization course work; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by the state through review and transcript analysis; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program; or

- A valid teaching certificate from a state with which Oklahoma has a reciprocity agreement.

In addition, candidates must undergo a fingerprint check or police record check (district option, per statute), must possess a Social Security number allowing a permit to work in the United States, and must complete a criminal history questionnaire/assessment.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Oklahoma allows the issuance of Emergency Certificates in situations in which the district superintendent documents the need for acceptable teachers and the effort made to employ such a teacher. A teacher already certified in another subject can be issued an Emergency Certificate.

Oregon

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, along with completion of a state-approved teacher preparation program; or

- The post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program.

In addition, an individual must undergo a fingerprint check or police record examination, have knowledge of state and federal laws prohibiting discrimination, and possess an approved first-aid card.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state or Oregon created a Transitional Teaching License as an alternative entry into the teaching profession. While teaching under this condition, an individual must meet all requirements for the Initial Teaching License by the expiration date. The Limited Teaching License was also created for highly specialized, short-duration teaching assignments. The Limited Teaching License may be renewed without meeting requirements for an Initial Teaching License, but the passage of basic skills tests is required.

Pennsylvania

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area, and the completion of a state-approved teacher preparation program; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by the state through review and transcript analysis.
- A valid teaching certificate from a state with which Pennsylvania has a reciprocity agreement.

In addition, an individual must pass a state-prescribed assessment and have U.S. citizenship status.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Pennsylvania issues the Emergency Certificate to a person to fill a vacancy, obligating the certificate holder to complete a minimum number of credit hours in the certification area to renew the certificate for an additional year. The state also issues long-term certificates without an educational obligation, but does not guarantee the holder employment the following year.

Rhode Island

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, with specific credit-hour requirements for general and professional education course work and student teaching.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Rhode Island gives a 1-year Emergency Certificate to an individual when the services of a fully certified candidate cannot be secured. The Emergency Certificate may be renewed if the individual has had a successful teaching experience verified by the local appointing authority and has completed 6 semester hours of college credits required for Provisional Certification in the area in which Emergency Certification is held.

The student teaching requirement can be waived for individuals who can document 2 years of teaching experience at the grade level for which certification is sought.

South Carolina

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area and fulfillment of specific credit-hour requirements for general and professional education course work; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by the state through review and transcript analysis; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program; or
- A valid teaching certificate from a state with which South Carolina has a reciprocity agreement, or has passed a state-prescribed assessment.

In addition, an individual must undergo a fingerprint check and police record examination.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of South Carolina issues an Out-of-Field Permit upon the request of a district to teachers seeking certification outside of their subject area. In order to be eligible for the Out-of-Field Permit, the individual must have completed 12 semester hours of course work in the field for which they are seeking certification.

South Dakota

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a certifiable major from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A valid teaching certificate from a state that has signed the MINKSAO agreement (MI, IA, NE, KS, SD, AK, OK) to issue a 2-year reciprocal certificate.

In addition, candidates must sign a notarized citizenship statement and verification that they have not been convicted of any crime involving moral turpitude, including traffic in narcotics. For a 5-year renewable certificate, a complete course requirements including 3 semester hours each of Human Relations and South Dakota Indian Studies.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

South Dakota offers the following options for districts/schools to hire individuals who do not currently hold a regular teacher certificate: Alternative Certification, Long-Term Substitutes.

In addition, individuals who hold a regular teacher certificate may receive a waiver to teach out-of-field on an Authority to Act while pursuing the necessary requirements for the proper certification.

Tennessee

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program; or

- A valid teaching certificate from a state with which Tennessee has a reciprocity agreement.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

A description of waiver categories was not provided.

Texas

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in a subject area from an accredited postsecondary institution; successful completion of a university-prescribed assessment of reading, writing, mathematics, and critical thinking; and completion of a state-approved teacher preparation program; or

- A post-baccalaureate program or course work from an accredited institution in professional education resulting in either a master's degree in teaching or a state certification; or

- A valid teaching certificate from a state with which Texas has a reciprocity agreement.

In addition, a candidate must undergo a criminal history check.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Texas issues Emergency Certificates to both certified teachers and non-certified individuals who meet minimum requirements for the assignment. A certified educator may be serving outside their field or an uncertified individual may have met content course work requirements, but not pedagogical requirements.

Utah

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or

- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or

- A valid teaching certificate from a state with which Utah has a reciprocity agreement.

In addition, a candidate must undergo an FBI fingerprint check or police record investigation, and present verification of current teaching experience or completion of courses in technology, reading in the content area, and special education law.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Utah offers various options that allow individuals who have not completed a certification program to teach: (a) the Alternative Preparation for Teaching Program allows individuals with a major or minor in the content area and more than 5 years' experience in the field to complete specific course work over a 2-year period; (b) an Eminence Certificate is given to individuals qualified in special fields, such as the arts, and allows them to teach up to 2 periods a day.

Because Utah law requires teachers to be certified and endorsed in the content area of their assignment, school districts may request Letters of Authorization for individuals not endorsed in their assigned content area. The Letter of Authorization is good for 1 year and may be renewed up to 4 years with completion of course work leading to the endorsement.

Vermont

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or

- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or

- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program.

In addition, candidates must undergo a fingerprint check or show evidence of at least 12 consecutive weeks of student teaching, meet state Board-specified knowledge and skills, and successfully complete a major, or its equivalent, in the liberal arts and sciences.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Vermont issues a waiver in cases where a local district is unable to find appropriately licensed or endorsed applicants after making all reasonable efforts to do so; when a licensed or endorsed applicant does not possess the qualities necessary for the specific assignment; and when the teaching candidate possesses outstanding compensating qualifications for the specific licensure or certification requirements; and when adequate on-site supervision is provided.

Virginia

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A valid teaching certificate from a state with which Virginia has a reciprocity agreement.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Virginia offers two special licenses to individuals who have not completed all requirements for certification. The Provisional License is a 3-year nonrenewable license for individuals entering the teaching field through an alternative route. A Special Education Conditional License is a 3-year nonrenewable license issued to an individual employed as a special education teacher. Individuals must meet certain degree and program of study requirements while these licenses are valid.

Washington

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program.

In addition, a fingerprint check or police record examination is required.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Washington issues Conditional or Emergency Substitute Certificates to a school district when it has been determined that a teacher has the competencies to be an effective teacher in areas other than areas currently endorsed. A planning and study plan associated with the out-of-endorsement assignment must be developed and submitted. Annual reports are required by the State Board of Education indicating the number of teachers in out-of-endorsement assignments and the specific assistance provided.

West Virginia

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area from an accredited postsecondary institution, and completion of a state-approved teacher preparation program; or
- A valid teaching certificate from a state with which West Virginia has a reciprocity agreement.

In addition, candidates must be U.S. citizens, of good moral character, and 18 years of age, pass physical, mental and emotional qualifications; and have a 2.5 grade point average on a 4.0 point scale.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of West Virginia gives the state superintendent the authority to waive any licensure regulation if justified. These waivers are not necessarily temporary in nature. A Temporary Certificate may be granted to an out-of-state applicant who has completed a state-approved program, but lacks the testing and/or citizenship requirements. A Permit is a 1-year license granted to an individual who has at least 25 percent of the state-approved program completed, and is employed to teach in the area of specialization for which the permit is issued. An Out-of-Field Authorization is a 1-year license granted to an individual who holds a valid teaching certification, has less than 25 percent of the program completed, and is employed to teach in the same specialization area.

Wisconsin

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area, and either completion of a state-approved teacher preparation program or completion of specific credit-hour requirements in general and professional education course work; or
- A post-baccalaureate program or course work in professional education and completion of a state-approved teacher preparation program.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Wisconsin issues a Special License for out-of-field teaching for individuals who are licensed teachers. Valid for 1 year, these Special Licenses must be requested in writing with a full explanation and justification of the need.

Wyoming

General Certification and Licensure Requirements

The initial teacher certificate or license is granted by the state with the fulfillment of the following conditions:

- A bachelor's degree in education from an accredited postsecondary institution and completion of a state-approved teacher preparation program; or
- A bachelor's degree in a subject area and completion of a state-approved teacher preparation program; or
- A degree from a non-U.S. institution equivalent to a bachelor's degree, including general and professional education requirements, as determined by the state through review and transcript analysis; or
- A post-baccalaureate program or course work in professional education, and completion of a state-approved teacher preparation program; or
- A valid teaching certificate from a state with which Wyoming has a reciprocity agreement.

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In addition, an individual must undergo a fingerprint check or police record examination.

State Waiver Categories: Exceptions from Regular Certification and Licensure Requirements

The state of Wyoming issues Temporary Permits for individuals without credentials who carry a bachelor's degree in the subject area. Transitionals are individuals teaching who meet two-thirds of the program requirements for teaching in the subject area. A Collaboration is an emergency tool available to school districts on a 1-year basis to cover out-of-field assignments. A Waiver is a permanent suspension of a requirement of rule. An Exception is a temporary suspension of a certificate regulation due to special circumstances, and are issued for a specific length of time.

Appendix II

Alternative Teacher Certification Sources[a]

Alternative Paths to Teaching: A Directory of Post-Baccalaureate Programs

- Published by American Association of Colleges for Teacher Education, 2nd Ed., January 1996.
- This directory provides information on 328 programs in colleges and universities for those who already have a bachelor's degree and want to earn a teaching license, a master's degree, or both, including the approximate time to earn a license. Coursework and other requirements may vary according to the candidate's educational background and experience.
- For information on price and shipping charges phone, AACTE, (202) 293-2450.

Alternative Teacher Education: A State-by-State Analysis

- Published by National Center for Education Information, updated annually.
- This directory offers summaries of state programs.
- For information on price and shipping charges, phone (202) 966-8922.

Army New Careers in Education Hotline

- This hotline number provides information for U.S. Army personnel who already have a bachelor's degree and want to become teachers. Phone: 1-800-452-6616.

Service Members Opportunity Colleges

- Military personnel who are in a baccalaureate program or are interested in accessing alternative teacher certification can get information on college coursework available near military installations. Phone: 1-800-368-5622 or (202) 667-0079.

Teach for America

- This national teacher corps program places recent college graduates and others with baccalaureate degrees in 2-year positions in urban and rural schools. A 2-year program of professional development is provided for all participants. Special effort is made to recruit people of color and prospective teachers in bilingual education, science, or mathematics.
- P.O. Box 5114, New York, NY 10185. Phone: 1-800-832-1230.

Teacher Education Policy in the States

- Published by American Association of Colleges for Teacher Education, Spring 1995.
- This survey contains summaries of state standards and of regular and alternative licensure requirements.
- For information on price and shipping charges, phone AACTE, (202) 293-2450.

Troops to Teachers

- This program provides stipends to military personnel with 6 or more years of continuous active duty or civilian workers in the defense industry who are displaced by reductions in force.
- Contact DANTES (Defense Activity for Non-Traditional Education Support), 6490 Saufley Field Road, Pensacola, FL 32509. Phone: 1-800-452-6616.

[a] Educational Resources Information Center. (1997). *Becoming a teacher. Alternative certification*. Retrieved October 2, 2001, from http://www.peaklearn.com/newteach/alternative

Appendix III

State Department of Education Certification Web Sites and Addresses

Alabama
Teacher Education and Certification Office
State of Alabama Dept of Education
5201 Gordon Persons Office Bldg
50 N Ripley St
PO Box 302101
Montgomery, AL 36130-2101
http://www.alsde.edu/general/General_Certification_Information.pdf

Alaska
Teacher Education and Certification
Alaska Dept of Education and
Early Development
801 W. 10th St, Ste 200
Juneau, AK 99801-1894
http://www.educ.state.ak.us/TeacherCertification/home.html

Arizona
Teacher Certification Unit
Arizona Dept of Education
1535 W. Jefferson
Phoenix, AZ 85007
http://www.ade.state.az.us/certification/

Arkansas
Office of Professional Licensure
Arkansas Dept of Education
Rms 106B & 107B
4 State Capitol Mall
Little Rock, AR 72201-1071
http://arkedu.state.ar.us/teachers/index.html

California
California Commission on Teaching
Credentialing
1900 Capitol Ave
Sacramento, CA 95814
http://www.ctc.ca.gov/credentialinfo/credinfo.html

Colorado
Educator Licensing Unit
Colorado Dept of Education
201 E Colfax Ave, Rm 105
Denver, CO 80203
http://www.cde.state.co.us/index_license.htm

Connecticut
Bureau of Certification and Professional
Development
Connecticut State Dept of Education
PO Box 150471, Rm 243
Hartford, CT 06115-0471
http://www.state.ct.us/sde/dtl/cert/index.htm

Delaware
Office of Certification
Delaware Dept of Education
John G. Townsend Bldg
PO Box 1402
Federal and Lockerman Sts
Dover, DE 19903-1402
http://deeds.doe.state.de.us/

District of Columbia
Teacher Certification
District of Columbia Public Schools
825 N Capitol St NE, 6th Fl
Washington, DC 20002-4232
http://www.k12.dc.us/dcps/home.html

Florida
Bureau of Educator Certification
Florida Dept of Education
Turlington Bldg, Ste 201
325 W Gaines St
Tallahassee, FL 32399-0400
http://www.firn.edu/doe/bin00022/home002 2.htm

Georgia
Georgia Professional Standards Commission
2 Peachtree St, Ste 6000
Atlanta, GA 30303
http://www.doe.k12.ga.us/humanresources/teachercertification.asp

Hawaii
Hawaii Teacher Standards Board
650 Iwilei Rd #201
Honolulu, HI 96817
http://www.htsb.org/

Idaho
Teacher Certification
Idaho State Dept of Education
PO Box 83720
Boise, ID 83720-0027
http://www.sde.state.id.us/certification/

Illinois
Illinois State Teacher Certification Board
100 N First St
Springfield, IL 62777-0001
http://www.isbe.net/teachers/

Indiana
Teacher Certification Program
Indiana Professional Standards Board
251 E Ohio, Ste 201
Indianapolis, IN 46204-2133
http://www.state.in.us/psb/
http://ideanet.doe.state.in.us/

Iowa
Iowa Board of Education Examiners
Grimes State Office Bldg
E 14th and Grand
Des Moines, IA 50310-0146
http://www.state.ia.us/educate/programs/boee/index.html

Kansas
Certification and Teacher Education
Kansas Dept of Education
120 SE 10th Ave
Topeka, KS 66612
http://www.ksbe.state.ks.us/cert/cert_info.html

Kentucky
Education Professional Standards Board
1024 Capital Center Dr, Ste 225
Frankfort, KY 40601
http://www.kyepsb.net/teachers.html

Louisiana
Bureau of Higher Education and Teacher Certification
Louisiana Dept of Education
PO Box 94064
Baton Rouge, LA 70804-9064
http://www.doe.state.la.us/DOE/asps/home.asp?I=CERT

Maine
Division of Certification and Placement
Maine Dept of Education
23 State House Sta
Augusta, ME 04333-0023
http://www.state.me.us/education/cert/cert.htm

Maryland
Teacher Education and Certification Branch
Maryland Dept of Education
200 W Baltimore St
Baltimore, MD 21201
http://www.msde.state.md.us/certification/index.htm

Massachusetts
Office of Certification and Credentialing
Massachusetts Dept of Education
350 Main St.
Malden, MA 02148-5023
http://www.doe.mass.edu/educators/

Michigan
Teacher Preparation Certification
Michigan Dept of Education
PO Box 30008
Lansing, MI 48909
http://www.michigan.gov/mde/0,1607,7-140-5234_5683---,00.html

Minnesota
Minnesota Personnel Licensing
Minnesota Dept of Children Families & Learning
1500 Highway 36 West
Roseville, MN 55113
http://www.educ.state.mn.us/licen/license.htm

Mississippi
Educator Licensure Certification
Mississippi Dept of Education
PO Box 771
Jackson, MS 39205
http://www.mde.k12.ms.us/license/

Missouri
Teacher Education Certification
Missouri Dept of Elementary and Secondary Education
PO Box 480
Jefferson City, MO 65102
http://www.dese.state.mo.us/divteachqual/teachcert/

Montana
Teacher Education Certification
Office of Public Instruction
PO Box 202501
Helena, MT 59601-2501
http://www.opi.state.mt.us/cert/Index.html

Nebraska
Teacher Education and Certification
Nebraska Dept of Education
301 Centennial Mall S
PO Box 94987
Lincoln, NE 68509-4987
http://www.nde.state.ne.us/tcert/tcmain.html

Nevada
Teacher Licensing Office
Nevada Dept of Education
1820 E Sahara Ave, Ste 205
Las Vegas, NV 89104
http://www.nde.state.nv.us/licensure/

New Hampshire
Bureau of Credentialing
New Hampshire State Dept of Education
101 Pleasant St
Concord, NH 03301-3860
http://www.ed.state.nh.us/Certification/teacher.htm

New Jersey
Office of Licensing
New Jersey Dept of Education
PO Box 500
Trenton, NJ 08625-0500
http://www.state.nj.us/njded/educators/license/index.html

New Mexico
Professional Licensure Unit
New Mexico Dept of Education
300 Don Gaspar
Santa Fe, NM 87501-2786
http://www.sde.state.nm.us/divisions/ais/licensure/index.html

New York
Office of Teaching
New York State Education Department
89 Washington Ave.
Albany, NY 12230
http://www.highered.nysed.gov/tcert/

North Carolina
Licensure Section
North Carolina Dept of Public Instruction
301 No Wilmington St
Raleigh, NC 27601-2825
http://www.ncpublicschools.org/licensure/

North Dakota
North Dakota Education Standards and Practices Board
600 E Boulevard Ave, Dept 202
Bismarck, ND 58505-0080
www.state.nd.us/espb/

Ohio
Office of Certification/Licensure
Ohio Dept of Education
25 S Front St, Mail Stop 105
Columbus, OH 43215-4183
http://www.ode.state.oh.us/teaching-profession/Teacher/Certification_Licensure/default.asp

Oklahoma
Professional Standards Section
Oklahoma State Dept of Education
Hodge Education Bldg, Rm 212
2500 N Lincoln Blvd
Oklahoma City, OK 73105-4599
http://www.sde.state.ok.us/pro/tcert/profstd.html

Oregon
Teacher Standards and Practices Commission of Oregon
465 Commercial St NE
Salem, OR 97301
http://www.tspc.state.or.us/

Pennsylvania
Bureau of Teacher Certification and Preparation
Pennsylvania Dept of Education
333 Market St
Harrisburg, PA 17126-0333
http://www.teaching.state.pa.us/teaching/site/default.asp

Rhode Island
Office of Teacher Education and Certification
State of Rhode Island and Providence Plantations Dept of Education
Shepard Bldg
255 Westminster St
Providence, RI 02903-3400
http://www.ridoe.net/teacher_cert/Default.htm

South Carolina
Division of Teacher Quality
South Carolina Dept of Education
Landmark II Office Bldg
3700 Forest Dr, Suite 500
Columbia, SC 29204
http://www.scteachers.org/

South Dakota
Office of Policy and Accountability
Dept of Education & Cultural Affairs
Division of Education
700 Governors Dr
Pierre, SD 57501-2291
www.state.sd.us/state/executive/deca/account/certif.htm

Tennessee
Office of Teacher Licensing
Tennessee Dept of Education
710 James Robertson Pkwy
5th Fl, Andrew Johnson Tower
Nashville, TN 37243-0377
http://www.state.tn.us/education/lic_home.htm

Texas
Texas State Board for Educator Certification
4616 W Howard Ln, Ste 120
Austin, TX, 78728
http://www.sbec.state.tx.us

Utah
Educator Licensing
Utah State Office of Education
250 E 500 S
PO Box 144200
Salt Lake City, UT 84114-4200
http://www.usoe.k12.ut.us/cert/

Vermont
Licensing Office
Vermont Dept of Education
120 State St
Montpelier, VT 05620
http://www.state.vt.us/educ/license

Virginia
Division of Teacher Education and Licensure
Virginia Dept of Education
PO Box 2120
Richmond, VA 23218-2120
http://www.pen.k12.va.us/VDOE/newvdoe/teached.html

Washington
Professional Education and Certification
Office of Superintendent of Public Instruction
Old Capitol Bldg
PO Box 47200
Olympia, WA 98504-7200
http://www.k12.wa.us/cert

West Virginia
Office of Professional Preparation
West Virginia Dept of Education
1900 Kanawha Blvd E
Bldg 6, Rm B 252
Charleston, WV 25305-0330
http://wvde.state.wv.us/certification/certificationfaqs.html

Wisconsin
Teacher Education and Licensing
Wisconsin Dept of Public Instruction
125 S Webster St
PO Box 7841
Madison, WI 53707-7841
http://www.dpi.state.wi.us/dpi/dlsis/tel/index.html

Wyoming
Wyoming Professional Teaching Standards Board
1920 Thomes Ave, Ste 400
Cheyenne, WY 82001
http://www.k12.wy.us/ptsb/

Survey of Alternative Teacher Certification Procedures

State	Academic	Agriculture	Business	Computer Science	Family & Consumer Science	Health	Marketing (Distributive Education)	Technology	Trade & Industrial
Alabama[a]	CEHJ		CEHJ		CEHJ	[b]	CEHJ	CEHJ	CEHJ[c]
Alaska[d]	BI	I	I	I	I	I	I	I	I
Arizona	BF	ACGH	ACGH			ACGH	ACGH		ACGH
Arkansas (NR)									
California	ADFHJ	BEF	BCEF	CF	BCEF	CF	CF (some BE)	BEF	CF
Colorado	A	A	A	I	A	A	A	A	A
Connecticut (NR)									
Delaware	BE	BE	BE					BE	
DC (NR)									
Florida	BCGJ	BCJ	BCJ	BCJ	BCJ	BCJ	BCJ	BCJ	BCJ
Georgia	ABCDEGH	ABCDEGH	ABCDEGH		ABCDEGH	ABCDEGH	ABCDEGH	ABCDEGH	ABCDEGH
Hawaii (NR)									
Idaho	B	B	B		B	B	B	B	B
Illinois (NR)									
Indiana (NR)									
Iowa	I								
Kansas	DH								
Kentucky	ABDEFH	ABDEFH	ABDEFH	ABDEFH	ABDEFH	ABDEFH	ABDEFH	ABDEFH	ABDEFH
Louisiana	EF								
Maine	ADJ							ADJ	
Maryland[e]	A								
Massachusetts (NR)									

State	Academic	Agriculture	Business	Computer Science	Family & Consumer Science	Health	Marketing (Distributive Education)	Technology	Trade & Industrial
Michigan (NR)									
Minnesota (NR)									
Mississippi	A	I	A	I	I	I	A	A	I
Missouri	D	DG	D		F	H	J	D G	H
Montana	I	I	I	I	I	I	I	I	I
Nebraska	G	G	G	G	G		G	G	G
Nevada	G I	C	C	C	C	C G	G	C G	C
New Hampshire (NR)									
New Jersey	A	A	A		A	A	A	A	A
New Mexico	ACH	A	A	A	A	A	A	A	A
New York	ABCDE FGHJ	ABCDE FGHJ	ABCDE FGHJ		ABCDE FGHJ	ABCD E FGHJ	ABCDE FGHJ	ABCDE FGHJ	CDFG
North Carolina	CDF	ACDF	ACDF	ACDF	ACDF	ACDF	ACDF	ACDF	CF
North Dakota	DFI	DF	DF	ADF	DF	DF	DF	ADF	ADF
Ohio	B								
Oklahoma	C	AC	DH		CFH	CFH	AC	AC	ACFH
Oregon	C	C	C	C	C	C	C	C	C
Pennsylvania (NR)									
Rhode Island	EF	F	EF		F	F		F	F
South Carolina (NR)									
South Dakota	D								
Tennessee	DFG	DFG	DFG		DFG	DFG	DFG	DFG	

State	Academic	Agriculture	Business	Computer Science	Family & Consumer Science	Health	Marketing (Distributive Education)	Technology	Trade & Industrial
Texas (NR)									
Utah (NR)									
Vermont[g]	CFGI	C	C	C	C	C	C	C	E[h]
Virginia (NR)									
Washington[i]	BE	IE	IE		IE		IE	IE	
West Virginia	FG	FG	FG		FG	FG	FG	FG	FG
Wisconsin	DF	DF	DF	DF	DF	DF	DF	DF	
Wyoming	CDF								F

Note. $N = 36$. NR indicates the state did not provide a response. From: *Alternative Teacher Certification: A State-by-State Analysis 2000* (p. 41) by C. E. Feistritzer and D. T. Chester. Washington, DC: National Center for Education Information. Copyright 2000 by National Center for Education Information. Reprinted by permission.

[a]Alabama—Alabama has several alternative routes to certification. We have provided the best answers that are applicable across those routes. Some routes combine classes. Classes E and J are combined in the alternative master's route, for example. [b]No longer exists as a traditional university-based route. [c]Trade and Industrial is referred to as Technical Education.

[d]Alaska—No alternative routes; has a limited certificate for vocational and technical education, military science, and Alaska's native language.

[e]Maryland—Secondary areas of certification fall under Class A. [f]Trade & Industrial have to meet occupational experience requirement also.

[g]Vermont—All CTE areas currently require a baccalaureate degree to enter the alternative licensure route. [h]Trade and Industrial have a mentoring component included.

[i]Washington—Limited certification in computer science, health, and trade and industrial areas. Based on occupational experience and completion of vocational teaching pedagogy.

Ten Alternative Teacher Certification Classes[j]

***Class A*:** The program has been designed explicitly to attract individuals who already have a bachelor's degree in a field other than education into elementary or secondary school teaching. The program is not restricted to addressing shortages, and is not restricted by secondary grade level or subject area. Alternative teacher certification programs in states' Class A programs involve teaching with a trained mentor, and include formal instruction dealing with the theory and practice of teaching during the school year—and sometimes the summer before and/or after.

***Class B*:** These are teacher certification routes that have been designed to attract individuals into teaching who have at least a bachelor's degree. Mentoring and formal instruction are part of the program. However, what distinguishes this class is that states with Class B programs restrict the programs to addressing shortages or restrict secondary grade levels and/or subject areas included in the program.

***Class C*:** These routes use review of academic and professional background and transcript analysis. They involve individually designed in-service training and course taking to reach competencies required for certification, if these are deemed applicable. Program design is the responsibility of the state and/or the local school district.

***Class D*:** This class is similar to Class C, except program design is the responsibility of an institution of higher education.

***Class E*:** Class E includes post-baccalaureate programs at an institution of higher education, with on-campus courses.

***Class F*:** Class F provides for emergency certificates or waivers that allow the individual to teach, most often without any on-site support or supervision, while taking traditional teacher education courses needed for full certification.

***Class G*:** Programs in this class allow for certifying individuals who are close to completing certification through the traditional teacher education route. These include individuals moving from one state to another and those certified in one endorsement area who are seeking certification in another endorsement area.

***Class H*:** Routes that enable certification of people with special qualifications, such as well-known authors, to teach specified subjects.

***Class I*:** There are no available alternatives to the approved college teacher education route for licensing teachers in this state.

***Class J*:** This class is intended to eliminate emergency routes. It provides options for individuals who don't meet basic requirements to become qualified to participate through an alternative or traditional route leading to teacher licensing.

[j]Feistritzer, C. E., & Chester, D. T. (2000). *Alternative teacher certification: A state-by-state analysis 2000.* Washington, DC: National Center for Education Information.

Survey of Professional Development Opportunities

State	What state-supported professional development programs currently exist? (Mark all that apply.)			Categories of new teachers for which professional development programs are available. (Describe.)	Types of professional development practices currently available. (Mark all that apply. See list below.)												
	State-Wide Required Program	State-Wide Optional Program	Local Programs Funded by State Grant		A	B	C	D	E	F	G	H	I	J	K	L	M
Alabama	X[a]	X	X[b]	Academic and all career and technical education areas	X			X	X			X	X	X	X	X	X
Alaska[c]																	
Arizona[d]	X	X	X	Academic and all career and technical education areas	X	X		X		X	X	X	X	X	X	X	
Arkansas (NR)																	
California	X			[e]	X	X	X	X	X		X	X	X	X	X	X	
Colorado[f]																	
Connecticut (NR)																	
Delaware		X		Secondary content areas of critical need (math, science, English, technology education, business education, foreign language)			X	X	X	X		X		X			
DC (NR)																	
Florida (NR)																	
Georgia			X		X	X		X	X		X			X			
Hawaii (NR)																	

State	What state-supported professional development programs currently exist? (Mark all that apply.)			Categories of new teachers for which professional development programs are available. (Describe.)	Types of professional development practices currently available. (Mark all that apply. See list below.)												
	State-Wide Required Program	State-Wide Optional Program	Local Programs Funded by State Grant		A	B	C	D	E	F	G	H	I	J	K	L	M
Idaho	X			All 1st, 2nd, and 3rd year classroom teachers and non-administrative personnel				X	X		X		X			X	
Illinois (NR)																	
Indiana (NR)																	
Iowa		X[g]	X[h]		X		X	X				X		X			
Kansas	X			All teachers as they seek re-certification				X									
Kentucky (NR)																	
Louisiana																	X
Maine		X	X	Academic, technology education	X	X	X	X	X	X	X	X	X	X	X	X	
Maryland			X	Varies from district to district													
Massachusetts (NR)																	
Michigan (NR)																	
Minnesota (NR)																	
Mississippi						X			X							X	

State	What state-supported professional development programs currently exist? (Mark all that apply.)			Categories of new teachers for which professional development programs are available. (Describe.)	Types of professional development practices currently available. (Mark all that apply. See list below.)												
	State-Wide Required Program	State-Wide Optional Program	Local Programs Funded by State Grant		A	B	C	D	E	F	G	H	I	J	K	L	M
Missouri	X	X	X	Business, Trade & Industrial, Health, Agriculture, Family and Consumer Science	X	X	X	X			X	X	X	X	X	X	
Montana[l]						X	X	X	X					X		X	
Nebraska			X		X	X		X	X		X		X	X	X	X	
Nevada	X			All categories of teachers	X							X		X	X		
New Hampshire (NR)																	
New Jersey	X			All novice teachers provided with two years of mentored teaching	X	X	X	X	X	X	X	X	X	X	X	X	X
New Mexico[j]		X	X	Academic, career and technical education	+	+	+	+	+			X	X	X			
New York[l]	X	X	X	All K12 titles and NYS issued certificate titles	X	X	X	X	X	X	X	X	X	X	X	X	
North Carolina	X	X	X	All teachers	X			X	X					X	X	X	
North Dakota		X	X	All teachers	X	X	X	X	X		X	X	X	X	X	X	
Ohio	X[m]							X	X			X	X	X			
Oklahoma (NR)																	

State	What state-supported professional development programs currently exist? (Mark all that apply.)			Categories of new teachers for which professional development programs are available. (Describe.)	Types of professional development practices currently available. (Mark all that apply. See list below.)												
	State-Wide Required Program	State-Wide Optional Program	Local Programs Funded by State Grant		A	B	C	D	E	F	G	H	I	J	K	L	M
Oregon	X			[n]									X [o]				
Pennsylvania (NR)																	
Rhode Island[p]	X	X	X					X				X	X	X	X		
South Carolina (NR)																	
South Dakota[q]																	
Tennessee		X		New teachers and teachers on interim licenses				X									
Texas (NR)																	
Utah (NR)																	
Vermont		X		All teachers	X			X						X			
Virginia (NR)																	
Washington			X					X									X
West Virginia	X	X	X	All teachers			X	X	X					X			X
Wisconsin		X		All teachers				X	X			X	X				
Wyoming													X				

Note. $N = 33$. NR indicates the state did not provide a response.

[a]Alabama—State-wide required program for health and technical education licensed teachers. [b]Local programs funded by state grant for academic licensed teachers.

[c]Alaska—Individual districts do their own professional development. Districts are allowed up to 10 in-service days for professional development.

[d]Arizona—Professional development programs currently exist for CTE teachers. Arizona requires academic teachers with a standard certificate to renew their certificate every 6 years by completing 100 professional development hours.

[e]California—All career and technical subject areas are usually included in the state-approved programs. Agriculture, business, and family and consumer science have baccalaureate-based programs that lead to one type of credential (single subjects), while all others are based on combinations of education and work experience, and are a different type of credential (designated subjects). The types of professional development practices that are currently available will vary from approved teacher preparation program to approved program. Some employing school districts will have workshops and support groups. We have such a teacher shortage at the elementary grades that most resources are used there, not at the career and technical level. Further, there is no state assistance (dollars) for any teacher preparation program, and the dollars available to the employing school districts are usually used on elementary level teachers or "academic" teachers at the middle and high school levels.

[f]Colorado—Does not support any state professional development programs.

[g]Iowa—State-wide optional programs provided for certification courses (tuition reimbursement), professional development resource centers, and professional development workshops. [h]Local programs funded by state grant for mentor.

[i]Montana—Any or all of the professional development practices may be available at the district level. There is no state support.

[j]New Mexico—All New Mexico public school districts are required to provide professional development opportunities for educators to address local educational goals. Results of professional development activity are reported annually during program budget reviews. As part of the accreditation process, schools receive technical assistance on issues related to curriculum and instructional practices, as appropriate. Teachers have opportunities to improve their knowledge and abilities through several state- and federally-funded initiatives that address early literacy, reading readiness, and the use of technology. In addition, the state awards and administers a number of programs that incorporate professional development components as part of their objectives. [k]Activities are available on a local basis, as appropriate.

[l]New York—Regulations call for district Professional Plans (eff. 2000) and continuing professional development for maintenance of the New York State Professional teaching certificate (eff. 2004). State funds include Operating Standards Aid (may be used for professional development to enable students to achieve the NYS Learning Standards) and other professional development sources. In addition, there are a number of competitive funding sources for support of professional development, including Targeted Staff Development grants and the statewide Mentor Teaching Internship Program.

[m]Ohio—Professional development activities are conducted (and approved) at the local level by state law. State activities are disseminated as best practices.

[n]Oregon—A professional development plan is required for all experienced teachers (those holding a Basic, Standard, or Continuing Teaching License). Professional development for new teachers (those holding an initial teaching license) is delivered through coursework that is required for advancement to the continuing teaching license. [o]All teachers are required to have a professional development plan, which is submitted to the Teacher Standards and Practices Commission for approval. The type of continuing professional development is a local decision. All of the listed professional development practices are probably used in at least one district in the state.

[p]Rhode Island—Article 31 is the legislation (funding) that requires a professional development team in each school to plan professional development. Rhode Island does not have a state mandated curriculum. Through Rhode Island Department of Education (RIDE), we offer various professional development courses on state initiatives. Our Title II Teacher Quality Grant (2000-2003) allows us to develop professional development work related to plans, mentor training, and cooperative teacher preparation.

[q]South Dakota—Does not support any state professional development programs.

Professional Development Practices

A. Assistance with selecting curriculum and instructional resources
B. Certification courses (offered on-site)
C. Certification courses (tuition reimbursement)
D. Mentor
E. Orientation session to school's policies and procedures
F. Paid curriculum development time prior to teaching
G. Peer support group
H. Professional development resource center
I. Professional development plan
J. Professional development workshops
K. Support from a professional development coordinator
L. Teacher handbook
M. Other (Please list):

Alabama—New-teacher visits (Alabama Department of Education specialist spend at least ½ to 1 full day with each new teacher).

Louisiana—Prescribed course work through an accredited college or university.

New Jersey—Include site-based opportunities (e.g., study groups, independent study, peer coaching, and action research).

Washington—Orientation session to school district policies and procedures, professional development plan, professional development workshops, support from a professional development coordinator, and teacher handbook is locally controlled by each school district.

Appendix VI

National Research Center for Career and Technical Education
University of Minnesota
College of Education and Human Development
Department of Work, Community, and Family Education
Certification Strategies for Career and Technical Education Teachers

Instructions: For each question, select the answers that best describe your experience.

Teacher Preparation and Experiences in Teaching:

1. In which subject(s) are you certified to teach? (Check all that apply.)

   a._____ Agriculture
   b._____ Business
   c._____ Computer Science
   d._____ Family And Consumer Science (Home Economics Education)
   e._____ Health
   f._____ Marketing (Distributive Education)
   g._____ Technology
   h._____ Trade And Industrial
   i._____ Other: Please list. _____

2. At the time you began teaching, had you completed all the requirements for teacher certification?

   _____ YES _____ NO

   IF NO, have you completed the requirements since you were hired?
   _____ YES _____ NO

3. Which of the following best describes your teacher certification program? (Check only one)

   ___ Baccalaureate degree in education that leads to certification
   ___ Fifth-year or post-baccalaureate program that leads to certification
   ___ Alternative certification (non-traditional)
   ___ Other (please describe) _____

4. Are you currently teaching?

   ___ YES
   If yes, when did you begin teaching? _____month _____year **Continue with Q-5**

   ___ NO, I have left the teaching profession. **Continue with Q-5**

   ___ NO, I did not enter the teaching profession. **Continue with Q–11**

5. Looking back to your first 6 months of teaching, how adequate was your pre–service preparation in each of the following areas?

   1 = Not Adequate
   2 = Somewhat adequate
   3 = Moderately adequate
   4 = Very adequate

a. Pedagogy or teaching methods	1	2	3	4
b. Knowledge of subject matter	1	2	3	4
c. Classroom management skills	1	2	3	4
d. Strategies for working with special populations	1	2	3	4

6. Which of the following was provided to you as a beginning teacher? (Mark all that apply)

a.___ Professional development plan
b.___ Support from a professional development coordinator
c.___ Professional development center resources
d.___ Professional development workshops
e.___ Orientation to the career and technical education student organizations in my teaching area
f.___ Coaching in reflection
g.___ None of the above
h.___ Other: Please specify _____

7. To what extent did you use the following types of support prior to or during your first 6 months of teaching?

1 = Not Available
2 = Available but did not use
3 = Available and used to some degree
4 = Available and used to a significant degree

a. Teacher handbook	1	2	3	4
b. Curriculum and instructional resources	1	2	3	4
c. Mentor	1	2	3	4
d. Peer support group	1	2	3	4
e. Orientation to school's policies and procedures	1	2	3	4
f. Paid curriculum development time prior to teaching	1	2	3	4
g. On-site certification courses	1	2	3	4
h. Tuition assistance for certification courses	1	2	3	4

8. How would you rate your teaching experience so far?

_____ Extremely positive
_____ Very positive
_____ Positive
_____ Somewhat positive
_____ Not at all positive

9. How important is/was each of the following in determining your intentions to continue or not continue teaching?

1 = Not important
2 = Somewhat important
3 = Moderately important
4 = Very important

a. Positive teaching experience	1	2	3	4
b. Professional development opportunities	1	2	3	4
c. Business and community internship opportunities	1	2	3	4
d. Sense of accomplishment	1	2	3	4
e. Availability of mentoring program	1	2	3	4
f. Availability of support services for new teachers	1	2	3	4
g. Recognition and support from supervisor	1	2	3	4
h. Recognition and support from peers	1	2	3	4
i. Positive interactions with students	1	2	3	4
j. Approval of family and/or friends	1	2	3	4
k. Pleasant working conditions	1	2	3	4
l. Quality and quantity of resources available	1	2	3	4
m. Leadership opportunities	1	2	3	4
n. Perception of job security	1	2	3	4
o. Potential for salary increases	1	2	3	4
p. Other: Please list_____	1	2	3	4

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10. What is your likelihood of continuing in the teaching profession? (Check only one)

_____ I definitely plan to continue teaching as a long-term career (8 or more years)
_____ I probably will continue teaching at least for a while (3 to 7 years)
_____ I am actively considering a non-teaching job
_____ I definitely plan to leave the teaching profession within a year or 2
_____ I plan to retire._____(Please indicate what year)
_____ I am no longer teaching

Demographics:

11. Age:

_____ Under 30
_____ 30–40
_____ 41–50
_____ 51–60
_____ 61–70
_____ Over 70

12. Gender:

_____ Male
_____ Female

13. Mark all levels of education you have completed.

_____ Doctorate
_____ Educational Specialist
_____ Master's
_____ Bachelor's
_____ Associate Degree
_____ Other: Please list_____

14. Ethnicity: (Check all that apply)

_____ White, Non-Hispanic
_____ Black, Non-Hispanic
_____ Hispanic
_____ Native American
_____ Asian/Pacific Islander
_____ Other _____

Appendix VII

Telephone Interview Questionnaire

Date _____ State _____ Name _____

Time Started _____ Area of CTE Licensure _____

Number of Years Taught _____ Suburban _____ Urban _____ Rural ____

1. Why did you decide to become a teacher?

2. At the time you began teaching, had you completed all the requirements for teacher certification in your state? ___Yes ___No

   If No, have you completed the requirements since you were hired? ____Yes ___ No

3. Which of the following best describes your teacher certification program?
   ____ a. Baccalaureate degree in education
   ____ b. Fifth-year or post-baccalaureate program
   ____ c. Alternative certification (Describe)
   ____ d. Other (Describe)

4. Do you feel this program (Question 3) was well designed to meet your needs as a beginning teacher?

   Yes _____ No _____ Somewhat _____
   Describe the needs not met if No or Somewhat:

5. Currently, is your teaching license:
   _____ a. Regular
   _____ b. Provisional
   _____ c. Emergency
   _____ d. Other (List) _____

6. Overall, how did you feel about your first year of teaching? Did you feel:
   ____ a. Very positive
   ____ b. Somewhat positive
   ____ c. Not positive
   Comments:

7. Looking back to your first year of teaching, do you feel you were adequately trained in:

   a. Classroom management Yes ____ No ____ Somewhat _____
   Comments:

b. Curriculum content Yes ____ No ____ Somewhat _____
Comments:

c. Teaching methods Yes ____ No ____ Somewhat _____
Comments:

d. Dealing with special populations Yes _____ No _____ Somewhat _____
Comments:

8. In some school districts, new teachers are provided with professional development programs to assist them as they begin teaching. What professional development programs or other types of assistance were available to you when you began teaching?

9. Was a mentor available to you during your first year of teaching?

Yes _____ No _____ **(Continue with Q-10)**

Tell me about your mentoring experience. (e.g. formal, informal)

10. What suggestions do you have to improve professional development programs or other types of assistance for new teachers?

11. When you think about teachers you know who are very effective in the classroom, what characteristics or experiences distinguish them from other teachers?

12. Many new teachers are asked to develop formal professional development plans. Others have informal plans and personal goals. Whether or not you have a formal plan, when you think about your own professional development as a teacher, what three things do you think would be most helpful to you as you continue teaching?
    1.
    2.
    3.

13. New teachers encounter challenges, whether expected or unexpected. Thinking back to the challenges you encountered as a new teacher, how did you work through them?

14. Given your experience in dealing with the challenges you encountered, is there anything you would like to add to your previous comments about professional development for new teachers?

Comments:

Time Ended _____

Appendix VIII

Career and Technical Education Certification Survey Responses $N = 632$

1. In which subject(s) are you certified to teach? (Check all that apply.)

Table 1

Certification Area

Certification Area	*f*	%
Agriculture	64	10
Business	202	32
Computer Science[a]	60	9
Family and Consumer Science (Home Economics)	95	15
Health	54	9
Marketing (Distributive Education)	69	11
Technology	126	20
Trade and Industrial	157	25
Other	118	19

Note. Percentages do not total 100% because some teachers reported certification in more than one CTE area.
[a]Some states designate computer science as a separate certification area.

2. At the time you began teaching, had you completed all the requirements for teacher certification?

Table 2

Completed Certification Requirements

	f	%
Yes	374	59
No	240	38
Non-Response	18	3

If no, have you completed the requirements since you were hired?

Certification Requirements Have Since Been Completed ($N = 240$)

	f	%
Yes	167	70
No	73	30

3. Which of the following best describes your teacher certification program? (Mark only one.)

Table 3

Teacher Certification Program

Type of Program	*f*	%
Baccalaureate degree in education that leads to certification	294	47
Fifth-year or post-baccalaureate program that leads to certification	111	18
Alternative certification (non-traditional)	180	28
Other	22	3
Non-Response	25	4

4. Are you currently teaching?

Table 4

Teaching Status

	f	%
Yes, I am currently teaching	597	94
No, I have left the teaching profession	21	3
No, I did not enter the teaching profession	6	1
Non-Response	8	1

Note. Percentages do not total 100% due to rounding or non-responses.

5. Looking back to your first 6 months of teaching, how adequate was your pre-service preparation in each of the following areas?

Table 5

Pre-Service Preparation

Areas of Pre-Service Preparation	Not Adequate		Somewhat Adequate		Moderately Adequate		Very Adequate		Not Adequate	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Pedagogy or teaching methods	71	11	141	22	268	42	137	22	15	2
Knowledge of subject matter	15	2	29	5	188	30	385	61	15	2
Classroom management skills	66	10	197	31	238	38	119	19	12	2
Strategies for working with special populations	113	18	250	40	188	30	70	11	11	2

Note. Percentages do not total 100% due to rounding.

6. Which of the following was provided to you as a beginning teacher? (Mark all that apply.)

Table 6

Support Provided as a Beginning Teacher

Types of Support	*f*	%
Professional development plan	227	36
Support from a professional development coordinator	206	33
Professional development resource center	129	20
Professional development workshop	369	58
Orientation to the career and technical education student organizations in my teaching area	181	29
Coaching in reflection	81	13
None of the above	130	21
Other	61	10

Note. Percentages do not total 100% due to multiple responses from support in more than one area.

7. To what extent did you use the following types of support prior to or during your first 6 months of teaching?

Table 7

Support Services Used During First Six Months of Teaching

Support Services Used	Not Available		Available Did Not Use		Available Used Some Degree		Available Used Significant Degree		Non-Response	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Teacher handbook	109	17	117	19	261	41	122	19	23	4
Curriculum and instructional resources	79	13	72	11	242	38	214	34	25	4
Mentor	186	29	97	15	171	27	153	24	25	4
Peer support group	233	37	106	17	176	28	92	15	25	4
Orientation to school's policies and procedures	97	15	135	21	267	42	110	17	23	4
Paid curriculum development time prior to teaching	433	69	54	9	67	11	44	7	34	5
On-site certification courses	447	71	66	10	53	8	29	5	37	6
Tuition assistance for certification courses	416	66	58	9	55	9	71	11	32	5

Note. Percentages do not total 100% due to rounding.

8. How would you rate your teaching experience so far?

Table 8

Rating of Teaching Experience

Rating	*f*	%
Extremely positive	142	22
Very positive	260	41
Positive	148	23
Somewhat positive	65	10
Not at all positive	5	1
Non-Response	12	2

Note. Percentages do not total 100% due to rounding.

Appendix IX

Agriculture Certification Survey Responses $N = 64$

1. At the time you began teaching, had you completed all the requirements for teacher certification?

Table 1

Completed Certification Requirements

	f	%
Yes	23	36
No	37	58
Non-Response	4	6

If no, have you completed the requirements since you were hired?

Requirements Have Since Been Completed ($N = 37$)

	f	%
Yes	18	49
No	19	51

2. Which of the following best describes your teacher certification program? (Check only one.)

Table 2

Teacher Certification Program

Type of Program	*f*	%
Baccalaureate degree in education that leads to certification	11	17
Fifth-year or post-baccalaureate program that leads to certification	7	11
Alternative certification (non-traditional)	36	56
Other	5	8
Non-Response	5	8

3. Are you currently teaching?

Table 3

Teaching Status

	f	%
Yes, I am currently teaching	59	92
No, I have left the teaching profession	2	3
No, I did not enter the teaching profession	0	0
Non-Response	1	2

Note. Percentages do not total 100% due to rounding.

4. Looking back to your first 6 months of teaching, how adequate was your pre–service preparation in each of the following areas?

Table 4

Pre-Service Preparation

Areas of Pre-Service Preparation	Not Adequate		Somewhat Adequate		Moderately Adequate		Very Adequate		Not Adequate	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Pedagogy or teaching methods	71	11	23	36	20	31	10	16	4	6
Knowledge of subject matter	1	2	1	2	11	17	47	73	4	6
Classroom management skills	6	9	15	23	23	36	17	27	3	5
Strategies for working with special populations	9	14	22	34	20	31	10	16	3	5

Note. Percentages do not total 100% due to rounding.

5. Which of the following was provided to you as a beginning teacher? (Mark all that apply.)

Table 5

Support Provided as a Beginning Teacher

Types of Support	*f*	%
Professional development plan	18	28
Support from a professional development coordinator	17	27
Professional development resource center	9	14
Professional development workshops	24	38
Orientation to the career and technical education student organizations in my teaching area	20	31
Coaching in reflection	8	13
None of the above	18	28
Other	6	9

Note. Percentages do not total 100% due to multiple responses from support in more than one area.

6. To what extent did you use the following types of support prior to or during your first 6 months of teaching?

Table 6

Support Services Used During First Six Months of Teaching

Support Services Used	Not Available		Available Did Not Use		Available Used Some Degree		Available Used Significant Degree		Non-Response	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Teacher handbook	9	14	8	13	32	50	12	19	1	5
Curriculum and instructional resources	11	17	5	8	18	28	26	41	4	6
Mentor	21	33	9	14	15	23	13	20	6	9
Peer support group	23	36	5	8	24	38	6	9	6	9
Orientation to school's policies and procedures	12	19	11	17	23	36	13	20	5	8
Paid curriculum development time prior to teaching	41	64	7	11	7	11	5	8	4	6
On-site certification courses	50	78	5	8	3	5	2	3	4	6
Tuition assistance for certification courses	50	78	4	6	3	5	3	5	4	6

Note. Percentages do not total 100% due to rounding.

7. How would you rate your teaching experience so far?

Table 7

Rating of Teaching Experience

Rating	*f*	%
Extremely positive	22	34
Very positive	20	31
Positive	13	20
Somewhat positive	6	9
Not at all positive	1	2
Non-Response	2	3

Note. Percentages do not total 100% due to rounding.

8. How important is/was each of the following in determining your intentions to continue or not continue teaching?

Table 8

Rating of Intentions to Continue or Not Continue Teaching

Rating	Not Important		Somewhat Important		Moderately Important		Very Important		Not Important	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Positive teaching experience	1	2	3	5	11	17	45	70	4	6
Professional development opportunities	5	8	13	20	21	33	23	36	2	3
Business and community internship opportunities	16	25	16	25	21	33	8	13	3	5
Sense of accomplishment	0	0	3	5	14	22	45	70	2	3
Availability of mentoring program	12	19	17	27	19	30	12	19	4	6
Availability of support services for new teachers	7	11	16	25	13	20	24	38	4	6
Recognition and support from supervisor	3	5	7	11	19	30	32	50	3	5
Recognition and support from peers	6	9	11	17	25	39	20	31	2	3
Positive interactions with students	0	0	1	2	19	30	42	66	2	3
Approval of family and/or friends	13	20	11	17	18	28	19	30	3	5
Pleasant working conditions	1	2	7	11	21	33	33	52	2	3
Quality and quantity of resources	3	5	9	14	23	36	26	41	3	5
Leadership opportunities	5	8	18	28	23	36	13	20	5	8
Perception of job security	4	6	10	16	17	27	28	44	5	8
Potential for salary increases	3	5	6	9	19	30	31	48	5	8
Other	1	2	0	0	0	0	7	11	56	88

Note. Percentages do not total 100% due to rounding.

9. What is your likelihood of continuing in the teaching profession? (Check only one.)

Table 9

Likelihood of Continuing in the Teaching Profession

Plans to Continue Teaching	*f*	%
I definitely plan to continue teaching as a long-term career (8 or more years)	38	59
I probably will continue teaching at least for a while (3 to 7 years)	16	25
I am actively considering a non-teaching job	2	3
I definitely plan to leave the teaching profession within a year or 2	0	0
I plan to retire	3	5
I am no longer teaching	2	3
Non-Response	3	5

Note. Percentages do not total 100% due to rounding.

10. Age

Table 10

Age

Age	*f*	%
Under 30	8	13
30–40	13	20
41–50	27	42
51–60	14	22
61–70	1	2
Over 70	0	0
Non-Response	1	2

Note. Percentages do not total 100% due to rounding.

11. Gender

Table 11

Gender

Gender	*f*	%
Male	27	42
Female	35	55
Non-Response	2	3

12. Mark all levels of education you have completed.

Table 12

Levels of Education Completed

Degrees	*f*	%
Doctorate	1	2
Educational specialist	1	2
Master's	13	20
Bachelor's	38	59
Associate degree	17	27
Other	8	13

Note. Percentages do not total 100% due to multiple responses for more than one level of education completed.

13. Ethnicity (Check all that apply.)

Table 13

Ethnicity

Ethnicity	*f*	%
White, Non-Hispanic	48	75
Black, Non-Hispanic	8	13
Hispanic	1	2
Native American	1	2
Asian/Pacific Islander	3	5
Other	2	3

Note: Percentages do not total 100% due to multiple responses for more than one type of ethnicity.

Appendix X

Business Certification Survey Responses $N = 202$

1. At the time you began teaching, had you completed all the requirements for teacher certification?

Table 1

Completed Certification Requirements

	f	%
Yes	148	73
No	49	24
Non-Response	5	2

Note. Percentages do not total 100% due to rounding or non-responses.

If no, have you completed the requirements since you were hired?

Requirements Have Since Been Completed ($N = 49$)

	f	%
Yes	32	65
No	17	35

2. Which of the following best describes your teacher certification program? (Check only one.)

Table 2

Teacher Certification Program

Type of Program	*f*	%
Baccalaureate degree in education that leads to certification	108	53
Fifth-year or post-baccalaureate program that leads to certification	39	19
Alternative certification (non-traditional)	43	21
Other	6	3
Non-Response	6	3

Note: Percentages do not total 100% due to rounding.

3. Are you currently teaching?

Table 3

Teaching Status

	f	%
Yes, I am currently teaching	191	95
No, I have left the teaching profession	8	4
No, I did not enter the teaching profession	1	0
Non-Response	2	1

Note. Percentages do not total 100% due to rounding.

4. Looking back to your first 6 months of teaching, how adequate was your pre-service preparation in each of the following areas?

Table 4

Pre-Service Preparation

Areas of Pre-Service Preparation	Not Adequate		Somewhat Adequate		Moderately Adequate		Very Adequate		Not Adequate	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Pedagogy or teaching methods	14	7	38	19	84	42	62	31	4	2
Knowledge of subject matter	5	2	12	6	68	34	115	57	2	1
Classroom management skills	21	10	56	28	72	36	51	25	2	1
Strategies for working with special populations	26	13	82	41	68	34	24	12	2	1

Note. Percentages do not total 100% due to rounding.

5. Which of the following was provided to you as a beginning teacher? (Mark all that apply.)

Table 5

Support Provided as a Beginning Teacher

Types of Support	*f*	%
Professional development plan	65	32
Support from a professional development coordinator	53	26
Professional development resource center	30	15
Professional development workshops	108	53
Orientation to the career and technical education student organizations in my teaching area	53	26
Coaching in reflection	21	10
None of the above	52	26
Other	22	11

Note. Percentages do not total 100% due to multiple responses from support in more than one area.

6. To what extent did you use the following types of support prior to or during your first 6 months of teaching?

Table 6

Support Services Used During First Six Months of Teaching

Support Services Used	Not Available		Available Did Not Use		Available Used Some Degree		Available Used Significant Degree		Non-Response	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Teacher handbook	27	13	37	18	93	46	40	20	5	2
Curriculum and instructional resources	21	10	23	11	91	45	61	30	6	3
Mentor	74	37	19	9	57	28	47	23	5	2
Peer support group	81	40	29	14	52	26	31	15	9	4
Orientation to school's policies and procedures	30	15	42	21	92	46	35	17	3	1
Paid curriculum development time prior to teaching	147	73	17	8	21	10	10	5	7	13
On-site certification courses	152	75	21	10	17	8	5	2	7	3
Tuition assistance for certification courses	145	72	20	10	19	9	12	6	6	3

Note. Percentages do not equal 100% due to rounding.

7. How would you rate your teaching experience so far?

Table 7

Rating of Teaching Experience

Rating	*f*	%
Extremely positive	51	25
Very positive	82	41
Positive	45	22
Somewhat positive	18	9
Not at all positive	2	1
Non-Response	4	2

8. How important is/was each of the following in determining your intentions to continue or not continue teaching?

Table 8

Rating of Intentions to Continue or Not Continue Teaching

Rating	Not Important		Somewhat Important		Moderately Important		Very Important		Not Important	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Positive teaching experience	2	1	11	5	47	23	138	68	4	2
Professional development opportunities	15	7	54	27	81	40	46	23	6	3
Business and community internship opportunities	59	29	73	36	48	24	16	8	6	3
Sense of accomplishment	0	0	10	5	45	22	142	70	5	2
Availability of mentoring program	66	33	56	28	54	27	18	9	8	4
Availability of support services for new teachers	37	18	67	33	50	25	38	19	10	5
Recognition and support from supervisor	14	7	33	16	82	41	67	33	6	3
Recognition and support from peers	14	7	39	19	87	43	58	29	4	2
Positive interactions with students	0	0	7	3	43	21	148	73	4	2
Approval of family and/or friends	33	16	46	23	66	33	51	25	6	3
Pleasant working conditions	4	2	16	8	74	37	104	51	4	2
Quality and quantity of resources	10	5	31	15	87	43	67	33	7	3
Leadership opportunities	15	7	53	26	83	41	45	22	6	3
Perception of job security	12	6	25	12	66	33	93	46	6	3
Potential for salary increases	14	7	27	13	65	32	91	45	5	2
Other	2	1	0	0	3	1	13	6	184	91

Note. Percentages do not total 100% due to rounding.

9. What is your likelihood of continuing in the teaching profession? (Check only one.)

Table 9

Likelihood of Continuing in the Teaching Profession

Plans to Continue Teaching	*f*	%
I definitely plan to continue teaching as a long-term career (8 or more years)	107	53
I probably will continue teaching at least for a while (3 to 7 years)	56	28
I am actively considering a non-teaching job	12	6
I definitely plan to leave the teaching profession within a year or 2	7	3
I plan to retire	7	3
I am no longer teaching	8	4
Non-Response	5	2

Note. Percentages do not total 100% due to rounding.

10. Age

Table 10

Age

Age	*f*	%
Under 30	48	24
30–40	75	37
41–50	41	20
51–60	32	16
61–70	3	1
Over 70	1	0
Non-Response	2	1

Note. Percentages do not total 100% due to rounding.

11. Gender

Table 11

Gender

Gender	*f*	%
Male	66	33
Female	129	64
Non-Response	7	3

12. Mark all levels of education you have completed.

Table 12

Levels of Education Completed

Degrees	*f*	%
Doctorate	0	0
Educational specialist	5	2
Master's	63	31
Bachelor's	167	83
Associate degree	28	14
Other	10	5

Note. Percentages do not total 100% due to multiple responses from more than one level of education completed.

13. Ethnicity (Check all that apply.)

Table 13

Ethnicity

Ethnicity	*f*	%
White, Non-Hispanic	174	86
Black, Non-Hispanic	15	7
Hispanic	4	2
Native American	2	1
Asian/Pacific Islander	2	1
Other	3	1

Note. Percentages do not total 100% due to multiple responses for more than one type of ethnicity.

Appendix XI

Computer Science Certification Survey Responses $N = 60$

1. At the time you began teaching, had you completed all the requirements for teacher certification?

Table 1

Completed Certification Requirements

	f	%
Yes	49	82
No	9	15
Non-Response	2	3

If no, have you completed the requirements since you were hired?

Requirements Have Since Been Completed ($N = 9$)

	f	%
Yes	6	67
No	3	33

2. Which of the following best describes your teacher certification program? (Check only one.)

Table 2

Teacher Certification Program

Type of Program	*f*	%
Baccalaureate degree in education that leads to certification	37	62
Fifth-year or post-baccalaureate program that leads to certification	11	18
Alternative certification (non-traditional)	10	17
Other	1	2
Non-Response	1	2

Note. Percentages do not total 100% due to rounding.

3. Are you currently teaching?

Table 3

Teaching Status

	f	%
Yes, I am currently teaching	59	98
No, I have left the teaching profession	0	0
No, I did not enter the teaching profession	1	2

4. Looking back to your first 6 months of teaching, how adequate was your pre–service preparation in each of the following areas?

Table 4

Pre-Service Preparation

Areas of Pre-Service Preparation	Not Adequate		Somewhat Adequate		Moderately Adequate		Very Adequate		Not Adequate	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Pedagogy or teaching methods	4	7	8	13	25	42	22	37	1	2
Knowledge of subject matter	1	2	3	5	18	30	37	62	1	2
Classroom management skills	5	8	12	20	26	43	16	27	1	2
Strategies for working with special populations	9	15	20	33	23	38	7	12	1	2

Note. Percentages do not total 100% due to rounding.

5. Which of the following was provided to you as a beginning teacher? (Mark all that apply.)

Table 5

Support Provided as a Beginning Teacher

Types of Support	*f*	%
Professional development plan	26	43
Support from a professional development coordinator	21	35
Professional development resource center	11	18
Professional development workshops	37	62
Orientation to the career and technical education student organizations in my teaching area	13	22
Coaching in reflection	9	15
None of the above	11	18
Other	4	7

Note. Percentages do not total 100% due to multiple responses for support in more than one area.

6. To what extent did you use the following types of support prior to or during your first 6 months of teaching?

Table 6

Support Services Used During First Six Months of Teaching

Support Services Used	Not Available		Available Did Not Use		Available Used Some Degree		Available Used Significant Degree		Non-Response	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Teacher handbook	5	8	10	17	28	47	15	25	2	3
Curriculum and instructional resources	8	13	5	8	25	42	19	32	3	5
Mentor	16	27	11	18	19	32	12	20	2	3
Peer support group	26	43	8	13	15	25	9	15	2	3
Orientation to school's policies and procedures	5	8	11	18	33	55	9	15	2	3
Paid curriculum development time prior to teaching	42	70	6	10	4	7	6	10	2	3
On-site certification courses	48	80	4	7	3	5	2	3	3	5
Tuition assistance for certification courses	45	75	5	8	3	5	5	8	2	3

Note. Percentages do not total 100% due to rounding.

7. How would you rate your teaching experience so far?

Table 7

Rating of Teaching Experience

Rating	*f*	%
Extremely positive	20	33
Very positive	19	32
Positive	13	22
Somewhat positive	5	8
Not at all positive	0	0
Non-Response	3	5

8. How important is/was each of the following in determining your intentions to continue or not continue teaching?

Table 8

Rating of Intentions to Continue or Not Continue Teaching

Rating	Not Important		Somewhat Important		Moderately Important		Very Important		Not Important	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Positive teaching experience	2	3	2	3	14	23	40	67	2	3
Professional development opportunities	5	8	16	27	23	38	14	23	2	3
Business and community internship opportunities	21	35	17	28	14	23	4	7	4	7
Sense of accomplishment	0	0	3	5	16	27	38	63	3	5
Availability of mentoring program	21	35	21	35	9	15	5	8	4	7
Availability of support services for new teachers	15	25	20	35	12	20	9	15	4	7
Recognition and support from supervisor	6	10	5	8	29	48	18	30	2	3
Recognition and support from peers	2	3	7	12	35	58	14	23	2	3
Positive interactions with students	0	0	2	3	13	22	42	70	3	5
Approval of family and/or friends	10	17	13	22	16	27	19	32	2	3
Pleasant working conditions	2	3	4	7	26	43	26	43	2	3
Quality and quantity of resources	4	7	17	28	21	35	15	25	3	5
Leadership opportunities	6	10	12	20	27	45	12	20	3	5
Perception of job security	6	10	9	15	14	23	29	48	2	3
Potential for salary increases	4	7	8	13	20	33	26	43	2	3
Other	1	2	0	0	2	3	2	3	55	92

Note. Percentages do not total 100% due to rounding.

9. What is your likelihood of continuing in the teaching profession? (Check only one.)

Table 9

Likelihood of Continuing in the Teaching Profession

Plans to Continue Teaching	*f*	%
I definitely plan to continue teaching as a long-term career (8 or more years)	36	60
I probably will continue teaching at least for a while (3 to 7 years)	15	25
I am actively considering a non-teaching job	3	5
I definitely plan to leave the teaching profession within a year or 2	4	7
I plan to retire	0	0
I am no longer teaching	0	0
Non-Response	2	3

10. Age

Table 10

Age

Age	*f*	%
Under 30	16	27
30–40	21	35
41–50	15	25
51–60	7	12
61–70	0	0
Over 70	0	0
Non-Response	1	2

Note. Percentages do not total 100% due to rounding.

11. Gender

Table 11

Gender

Gender	*f*	%
Male	29	48
Female	29	48
Non Response	2	3

Note. Percentages do not total 100% due to rounding.

12. Mark all levels of education you have completed.

Table 12

Levels of Education Completed

Degrees	*f*	%
Doctorate	0	0
Educational specialist	0	0
Master's	23	38
Bachelor's	52	87
Associate degree	10	17
Other	4	7

Note. Percentages do not total 100% due to multiple responses for more than one level of education completed.

13. Ethnicity (Check all that apply.)

Table 13

Ethnicity

Ethnicity	*f*	%
White, Non-Hispanic	53	88
Black, Non-Hispanic	4	7
Hispanic	1	2
Native American	1	2
Asian/Pacific Islander	1	2
Other	0	0

Note. Percentages do not total 100% due to multiple responses for more than one type of ethnicity.

Appendix XII

Family and Consumer Science (Home Economics) Certification Survey Responses $N = 95$

1. At the time you began teaching, had you completed all the requirements for teacher certification?

Table 1

Completed Certification Requirements

	f	%
Yes	71	75
No	22	23
Non-Response	2	2

If no, have you completed the requirements since you were hired?

Requirements Have Since Been Completed ($N = 22$)

	f	%
Yes	17	77
No	5	23

2. Which of the following best describes your teacher certification program? (Check only one.)

Table 2

Teacher Certification Program

Type of Program	*f*	%
Baccalaureate degree in education that leads to certification	61	64
Fifth-year or post-baccalaureate program that leads to certification	16	17
Alternative certification (non-traditional)	12	13
Other	3	3
Non-Response	3	3

3. Are you currently teaching?

Table 3

Teaching Status

	f	%
Yes, I am currently teaching	91	96
No, I have left the teaching profession	3	3
No, I did not enter the teaching profession	1	1

4. Looking back to your first 6 months of teaching, how adequate was your pre–service preparation in each of the following areas?

Table 4

Pre-Service Preparation

Areas of Pre-Service Preparation	Not Adequate		Somewhat Adequate		Moderately Adequate		Very Adequate		Not Adequate	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Pedagogy or teaching methods	7	7	16	17	43	45	26	27	3	3
Knowledge of subject matter	1	1	6	6	29	31	54	57	5	5
Classroom management skills	12	13	24	25	42	44	15	16	2	2
Strategies for working with special populations	12	13	40	42	29	31	12	13	2	2

Note. Percentages do not total 100% due to rounding.

5. Which of the following was provided to you as a beginning teacher? (Mark all that apply.)

Table 5

Support Provided as a Beginning Teacher

Types of Support	*f*	%
Professional development plan	29	31
Support from a professional development coordinator	33	35
Professional development resource center	19	20
Professional development workshops	61	64
Orientation to the career and technical education student organizations in my teaching area	27	28
Coaching in reflection	6	6
None of the above	20	21
Other	11	12

Note. Percentages do not total 100% due to multiple responses for support in more than one area.

6. To what extent did you use the following types of support prior to or during your first 6 months of teaching?

Table 6

Support Services Used During First Six Months of Teaching

Support Services Used	Not Available		Available Did Not Use		Available Used Some Degree		Available Used Significant Degree		Non-Response	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Teacher handbook	14	15	15	16	41	43	22	23	3	3
Curriculum and instructional resources	12	13	8	8	35	37	37	39	3	3
Mentor	29	31	17	18	21	22	24	25	4	4
Peer support group	37	39	11	12	29	31	16	17	2	2
Orientation to school's policies and procedures	10	11	21	22	37	39	24	25	3	3
Paid curriculum development time prior to teaching	69	73	4	4	7	7	9	9	6	6
On-site certification courses	69	73	11	12	7	7	2	2	6	6
Tuition assistance for certification courses	74	78	6	6	5	5	3	3	7	7

Note. Percentages do not total 100% due to rounding.

7. How would you rate your teaching experience so far?

Table 7

Rating of Teaching Experience

Rating	*f*	%
Extremely positive	17	18
Very positive	41	43
Positive	21	22
Somewhat positive	14	15
Not at all positive	1	1
Non-Response	1	1

8. How important is/was each of the following in determining your intentions to continue or not continue teaching?

Table 8

Rating of Intentions to Continue or Not Continue Teaching

Rating	Not Important		Somewhat Important		Moderately Important		Very Important		Not Important	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Positive teaching experience	0	0	1	1	28	29	64	67	2	2
Professional development opportunities	6	6	19	20	43	45	26	27	1	1
Business and community internship opportunities	34	36	25	26	27	28	5	5	4	4
Sense of accomplishment	0	0	1	1	23	24	69	73	2	2
Availability of mentoring program	25	26	27	28	30	32	10	11	3	3
Availability of support services for new teachers	16	17	28	29	26	27	22	23	3	3
Recognition and support from supervisor	4	4	16	17	38	40	34	36	3	3
Recognition and support from peers	2	2	24	25	36	38	31	33	2	2
Positive interactions with students	0	0	3	3	18	19	71	75	3	3
Approval of family and/or friends	13	14	14	15	40	42	25	26	3	3
Pleasant working conditions	3	3	7	7	32	34	51	54	2	2
Quality and quantity of resources	1	1	13	14	36	38	41	43	4	4
Leadership opportunities	11	12	25	26	36	38	21	22	2	2
Perception of job security	3	3	10	11	34	36	46	48	2	2
Potential for salary increases	4	4	8	8	31	33	50	53	2	2
Other	1	1	0	0	1	1	7	7	86	91

Note. Percentages do not total 100% due to rounding.

9. What is your likelihood of continuing in the teaching profession? (Check only one.)

Table 9

Likelihood of Continuing in the Teaching Profession

Plans to Continue Teaching	*f*	%
I definitely plan to continue teaching as a long-term career (8 or more years)	45	47
I probably will continue teaching at least for a while (3 to 7 years)	34	36
I am actively considering a non-teaching job	7	7
I definitely plan to leave the teaching profession within a year or 2	1	1
I plan to retire	4	4
I am no longer teaching	1	1
Non-Response	3	3

Note. Percentages do not total 100% due to rounding.

10. Age

Table 10

Age

Age	*f*	%
Under 30	26	27
30–40	24	25
41–50	27	28
51–60	15	16
61–70	2	2
Over 70	0	0
Non-Response	1	1

Note. Percentages do not total 100% due to rounding.

11. Gender

Table 11

Gender

Gender	*f*	%
Male	6	8
Female	88	92
Non-Response	1	1

Note. Percentages do not total 100% due to rounding.

12. Mark all levels of education you have completed.

Table 12

Levels of Education Completed

Degrees	*f*	%
Doctorate	1	1
Educational specialist	0	0
Master's	27	28
Bachelor's	83	87
Associate degree	9	9
Other	8	8

Note. Percentages do not total 100% due to multiple responses for more than one level of education completed.

13. Ethnicity (Check all that apply.)

Table 13

Ethnicity

Ethnicity	*f*	%
White, Non-Hispanic	87	92
Black, Non-Hispanic	2	2
Hispanic	0	0
Native American	5	5
Asian/Pacific Islander	0	0
Other	2	2

Note. Percentages do not total 100% due to multiple responses for more than one type of ethnicity.

Appendix XIII

Health Certification Survey Responses $N = 54$

1. At the time you began teaching, had you completed all the requirements for teacher certification?

Table 1

Completed Certification Requirements

	f	%
Yes	18	33
No	35	65
Non-Response	1	2

If no, have you completed the requirements since you were hired?

Requirements Have Since Been Completed ($N = 35$)

	f	%
Yes	19	54
No	12	34
Non-Response	4	11

2. Which of the following best describes your teacher certification program? (Check only one.)

Table 2

Teacher Certification Program

Type of Program	*f*	%
Baccalaureate degree in education that leads to certification	12	22
Fifth-year or post-baccalaureate program that leads to certification	8	15
Alternative certification (non-traditional)	28	52
Other	4	7
Non-Response	2	4

3. Are you currently teaching?

Table 3

Teaching Status

	f	%
Yes, I am currently teaching	52	96
No, I have left the teaching profession	0	0
No, I did not enter the teaching profession	0	0
Non-Response	2	4

4. Looking back to your first 6 months of teaching, how adequate was your pre–service preparation in each of the following areas?

Table 4

Pre-Service Preparation

Areas of Pre-Service Preparation	Not Adequate		Somewhat Adequate		Moderately Adequate		Very Adequate		Not Adequate	
	f	%	*f*	%	*f*	%	*F*	%	*f*	%
Pedagogy or teaching methods	14	26	19	35	13	24	8	15	0	0
Knowledge of subject matter	0	0	1	2	15	28	38	70	0	0
Classroom management skills	9	17	19	35	16	30	10	19	0	0
Strategies for working with special populations	16	30	27	50	8	15	3	6	0	0

Note. Percentages do not total 100% due to rounding.

5. Which of the following was provided to you as a beginning teacher? (Mark all that apply.)

Table 5

Support Provided as a Beginning Teacher

Types of Support	*f*	%
Professional development plan	21	39
Support from a professional development coordinator	23	43
Professional development resource center	12	22
Professional development workshops	29	54
Orientation to the career and technical education student organizations in my teaching area	13	24
Coaching in reflection	6	11
None of the above	11	20
Other	7	13

Note. Percentages do not total 100% due to multiple responses for support in more than one area.

6. To what extent did you use the following types of support prior to or during your first 6 months of teaching?

Table 6

Support Services Used During First Six Months of Teaching

Support Services Used	Not Available		Available Did Not Use		Available Used Some Degree		Available Used Significant Degree		Non-Response	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Teacher handbook	12	22	9	17	19	35	9	17	5	9
Curriculum and instructional resources	5	9	4	7	21	39	21	39	3	6
Mentor	14	26	10	19	11	20	16	30	3	6
Peer support group	20	37	5	9	20	37	7	13	2	4
Orientation to school's policies and procedures	10	19	11	20	20	37	9	17	4	7
Paid curriculum development time prior to teaching	29	54	4	7	11	20	5	9	5	9
On-site certification courses	32	59	8	15	3	6	4	7	7	13
Tuition assistance for certification courses	26	48	3	6	7	13	12	22	6	11

Note. Percentages do not total 100% due to rounding.

7. How would you rate your teaching experience so far?

Table 7

Rating of Teaching Experience

Rating	*f*	%
Extremely positive	13	24
Very positive	22	41
Positive	13	24
Somewhat positive	6	11
Not at all positive	0	0

8. How important is/was each of the following in determining your intentions to continue or not continue teaching?

Table 8

Rating of Intentions to Continue or Not Continue Teaching

Rating	Not Important		Somewhat Important		Moderately Important		Very Important		Not Important	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Positive teaching experience	0	0	2	4	17	31	35	65	0	0
Professional development opportunities	1	2	10	19	25	46	18	33	0	0
Business and community internship opportunities	14	26	13	24	13	24	13	24	1	2
Sense of accomplishment	0	0	3	6	11	20	40	74	0	0
Availability of mentoring program	15	28	11	20	17	31	11	20	0	0
Availability of support services for new teachers	10	19	14	26	19	35	11	20	0	0
Recognition and support from supervisor	0	0	7	13	23	43	24	44	0	0
Recognition and support from peers	2	4	11	20	29	54	12	22	0	0
Positive interactions with students	0	0	1	2	10	19	43	80	0	0
Approval of family and/or friends	6	11	11	20	23	43	14	26	0	0
Pleasant working conditions	0	0	3	6	20	37	31	57	0	0
Quality and quantity of resources	1	2	5	9	16	30	32	59	0	0
Leadership opportunities	4	7	11	20	24	44	15	28	0	0
Perception of job security	1	2	5	9	25	46	23	43	0	0
Potential for salary increases	3	6	5	9	18	33	28	52	0	0
Other	0	0	0	0	0	0	5	9	49	91

Note. Percentages do not total 100% due to rounding.

9. What is your likelihood of continuing in the teaching profession? (Check only one.)

Table 9

Likelihood of Continuing in the Teaching Profession

Plans to Continue Teaching	*f*	%
I definitely plan to continue teaching as a long-term career (8 or more years)	23	43
I probably will continue teaching at least for a while (3 to 7 years)	24	44
I am actively considering a non-teaching job	4	7
I definitely plan to leave the teaching profession within a year or 2	0	0
I plan to retire	2	4
I am no longer teaching	0	0
Non-Response	1	2

10. Age

Table 10

Age

Age	*f*	%
Under 30	4	7
30–40	9	17
41–50	34	63
51–60	6	11
61–70	1	2
Over 70	0	0

11. Gender

Table 11

Gender

Gender	*f*	%
Male	3	6
Female	49	91
Non-Response	2	3

12. Mark all levels of education you have completed.

Table 12

Levels of Education Completed

Degrees	*f*	%
Doctorate	0	0
Educational specialist	0	0
Master's	14	26
Bachelor's	35	65
Associate degree	16	30
Other	11	20

Note. Percentages do not total 100% due to multiple responses for more than one level of education completed.

13. Ethnicity (Check all that apply.)

Table 13

Ethnicity

Ethnicity	*f*	%
White, Non-Hispanic	49	91
Black, Non-Hispanic	4	7
Hispanic	0	0
Native American	1	2
Asian/Pacific Islander	0	0
Other	1	2

Note. Percentages do not equal 100% due to multiple responses for more than one type of ethnicity.

Appendix XIV

Marketing (Distributive Education) Certification Survey Responses $N = 69$

1. At the time you began teaching, had you completed all the requirements for teacher certification?

Table 1

Completed Certification Requirements

	f	%
Yes	47	68
No	20	29
Non-Response	2	3

If no, have you completed the requirements since you were hired?

Requirements Have Since Been Completed ($N = 20$)

	f	%
Yes	14	70
No	6	30

2. Which of the following best describes your teacher certification program? (Check only one.)

Table 2

Teacher Certification Program

Type of Program	*f*	%
Baccalaureate degree in education that leads to certification	34	49
Fifth-year or post-baccalaureate program that leads to certification	11	16
Alternative certification (non-traditional)	19	28
Other	4	6
Non-Response	1	1

3. Are you currently teaching?

Table 3

Teaching Status

	f	%
Yes, I am currently teaching	68	99
No, I have left the teaching profession	1	1
No, I did not enter the teaching profession	0	0

4. Looking back to your first 6 months of teaching, how adequate was your pre-service preparation in each of the following areas?

Table 4

Pre-Service Preparation

Areas of Pre-Service Preparation	Not Adequate		Somewhat Adequate		Moderately Adequate		Very Adequate		Not Adequate	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Pedagogy or teaching methods	7	10	13	19	29	42	20	29	0	0
Knowledge of subject matter	2	3	3	4	22	32	42	61	0	0
Classroom management skills	6	9	17	25	28	41	18	26	0	0
Strategies for working with special populations	10	14	26	38	24	35	9	13	0	0

Note. Percentages do not total 100% due to rounding.

5. Which of the following was provided to you as a beginning teacher? (Mark all that apply.)

Table 5

Support Provided as a Beginning Teacher

Types of Support	*f*	%
Professional development plan	24	35
Support from a professional development coordinator	17	25
Professional development resource center	9	13
Professional development workshops	47	68
Orientation to the career and technical education student organizations in my teaching area	27	39
Coaching in reflection	11	16
None of the above	17	25
Other	10	14

Note. Percentages do not total 100% due to multiple responses for support in more than one area.

6. To what extent did you use the following types of support prior to or during your first 6 months of teaching?

Table 6

Support Services Used During First Six Months of Teaching

Support Services Used	Not Available		Available Did Not Use		Available Used Some Degree		Available Used Significant Degree		Non-Response	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Teacher handbook	9	13	15	22	35	51	10	14	0	0
Curriculum and instructional resources	4	6	6	9	35	51	24	35	0	0
Mentor	22	32	12	17	16	23	18	26	1	1
Peer support group	26	38	10	14	21	30	11	16	1	1
Orientation to school's policies and procedures	12	17	13	19	29	42	15	22	0	0
Paid curriculum development time prior to teaching	48	70	7	10	5	7	7	10	2	3
On-site certification courses	50	72	6	9	4	6	6	9	3	4
Tuition assistance for certification courses	46	67	8	12	7	10	6	9	2	3

Note. Percentages do not total 100% due to rounding.

7. How would you rate your teaching experience so far?

Table 7

Rating of Teaching Experience

Rating	*f*	%
Extremely positive	22	32
Very positive	32	46
Positive	10	14
Somewhat positive	5	7
Not at all positive	0	0

Note. Percentages do not total 100% due to rounding.

8. How important is/was each of the following in determining your intentions to continue or not continue teaching?

Table 8

Rating of Intentions to Continue or Not Continue Teaching

Rating	Not Important		Somewhat Important		Moderately Important		Very Important		Not Important	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Positive teaching experience	0	0	6	9	14	20	49	71	0	0
Professional development opportunities	5	7	18	26	27	39	17	25	2	3
Business and community internship opportunities	18	26	24	35	21	30	5	7	1	1
Sense of accomplishment	0	0	0	0	12	17	57	83	0	0
Availability of mentoring program	18	26	24	35	19	28	5	7	3	4
Availability of support services for new teachers	18	26	16	23	15	22	17	25	3	4
Recognition and support from supervisor	7	10	13	19	28	41	20	29	1	1
Recognition and support from peers	6	9	19	28	24	35	19	28	1	1
Positive interactions with students	0	0	1	1	15	22	53	77	0	0
Approval of family and/or friends	12	17	18	26	19	28	18	26	2	3
Pleasant working conditions	1	1	3	4	27	39	37	54	1	1
Quality and quantity of resources	5	7	9	13	27	39	26	38	2	3
Leadership opportunities	4	6	16	23	34	49	14	20	1	1
Perception of job security	4	6	10	14	19	28	34	49	2	3
Potential for salary increases	5	7	5	7	24	35	34	49	1	1
Other	2	3	0	0	2	3	4	6	61	88

Note. Percentages do not total 100% due to rounding.

9. What is your likelihood of continuing in the teaching profession? (Check only one.)

Table 9

Likelihood of Continuing in the Teaching Profession

Plans to Continue Teaching	*f*	%
I definitely plan to continue teaching as a long-term career (8 or more years)	35	51
I probably will continue teaching at least for a while (3 to 7 years)	22	32
I am actively considering a non-teaching job	3	4
I definitely plan to leave the teaching profession within a year or 2	1	1
I plan to retire	4	6
I am no longer teaching	1	1
Non-Response	3	4

Note. Percentages do not equal 100% due to rounding.

10. Age

Table 10

Age

Age	*f*	%
Under 30	15	22
30–40	29	42
41–50	14	20
51–60	8	12
61–70	3	4
Over 70	0	0

11. Gender

Table 11

Gender

Gender	*f*	%
Male	32	46
Female	36	52
Non-Response	1	1

Note. Percentages do not total 100% due to rounding.

12. Mark all levels of education you have completed.

Table 12

Levels of Education Completed

Degrees	*f*	%
Doctorate	0	0
Educational specialist	2	3
Master's	27	39
Bachelor's	60	87
Associate degree	6	9
Other	3	4

Note. Percentages do not total 100% due to multiple responses for more than one level of education completed.

13. Ethnicity (Check all that apply.)

Table 13

Ethnicity

Ethnicity	*f*	%
White, Non-Hispanic	66	96
Black, Non-Hispanic	1	1
Hispanic	1	1
Native American	0	0
Asian/Pacific Islander	0	0
Other	1	1

Note. Percentages do not total 100% due to multiple responses for more than one type of ethnicity.

Appendix XV

Technology Certification Survey Responses $N = 126$

1. At the time you began teaching, had you completed all the requirements for teacher certification?

Table 1

Completed Certification Requirements

	f	%
Yes	75	60
No	45	36
Non-Response	6	5

If no, have you completed the requirements since you were hired?

Requirements Have Since Been Completed ($N = 45$)

	f	%
Yes	35	78
No	10	22

2. Which of the following best describes your teacher certification program? (Check only one.)

Table 2

Teacher Certification Program

Type of Program	*f*	%
Baccalaureate degree in education that leads to certification	63	50
Fifth-year or post-baccalaureate program that leads to certification	22	17
Alternative certification (non-traditional)	32	25
Other	2	2
Non-Response	7	6

3. Are you currently teaching?

Table 3

Teaching Status

	f	%
Yes, I am currently teaching	119	94
No, I have left the teaching profession	3	2
No, I did not enter the teaching profession	1	1
Non-Response	3	2

Note. Percentages do not total 100% due to rounding.

4. Looking back to your first 6 months of teaching, how adequate was your pre-service preparation in each of the following areas?

Table 4

Pre-Service Preparation

Areas of Pre-Service Preparation	Not Adequate		Somewhat Adequate		Moderately Adequate		Very Adequate		Not Adequate	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Pedagogy or teaching methods	12	10	26	21	56	44	30	24	2	1
Knowledge of subject matter	3	2	4	3	38	30	79	63	2	1
Classroom management skills	8	6	41	33	52	41	23	18	2	1
Strategies for working with special populations	18	14	51	40	36	29	19	15	2	1

Note. Percentages do not total 100% due to rounding.

5. Which of the following was provided to you as a beginning teacher? (Mark all that apply.)

Table 5

Support Provided as a Beginning Teacher

Types of Support	*f*	%
Professional development plan	40	32
Support from a professional development coordinator	39	31
Professional development resource center	20	16
Professional development workshops	66	52
Orientation to the career and technical education student organizations in my teaching area	28	22
Coaching in reflection	18	14
None of the above	31	25
Other	11	9

Note. Percentages do not total 100% due to multiple responses for support in more than one area.

6. To what extent did you use the following types of support prior to or during your first 6 months of teaching?

Table 6

Support Services Used During First Six Months of Teaching

Support Services Used	Not Available		Available Did Not Use		Available Used Some Degree		Available Used Significant Degree		Non-Response	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Teacher handbook	34	27	21	17	49	39	20	16	2	2
Curriculum and instructional resources	25	20	17	13	45	36	37	29	2	2
Mentor	42	33	17	13	34	27	29	23	4	3
Peer support group	53	42	22	17	31	25	16	13	4	3
Orientation to school's policies and procedures	30	24	19	15	57	45	15	12	5	4
Paid curriculum development time prior to teaching	91	72	9	7	13	10	8	6	5	4
On-site certification courses	95	75	6	5	13	10	6	5	6	5
Tuition assistance for certification courses	82	65	10	8	12	10	20	16	2	2

Note. Percentages do not total 100% due to rounding.

7. How would you rate your teaching experience so far?

Table 7

Rating of Teaching Experience

Rating	*f*	%
Extremely positive	23	18
Very positive	60	48
Positive	27	21
Somewhat positive	13	10
Not at all positive	0	0
Non-Response	3	2

Note. Percentages do not total 100% due to rounding or non-responses.

8. How important is/was each of the following in determining your intentions to continue or not continue teaching?

Table 8

Rating of Intentions to Continue or Not Continue Teaching

Rating	Not Important		Somewhat Important		Moderately Important		Very Important		Not Important	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Positive teaching experience	4	3	8	6	36	29	77	61	1	1
Professional development opportunities	13	10	27	21	59	47	26	21	1	1
Business and community internship opportunities	39	31	46	37	26	21	13	10	2	2
Sense of accomplishment	1	1	8	6	28	22	85	67	4	3
Availability of mentoring program	42	33	35	28	29	23	14	11	6	5
Availability of support services for new teachers	32	25	32	25	35	28	22	17	5	4
Recognition and support from supervisor	10	8	21	17	50	40	43	34	2	2
Recognition and support from peers	9	7	19	15	64	51	31	25	3	2
Positive interactions with students	0	0	5	4	40	32	79	63	2	2
Approval of family and/or friends	17	13	32	25	38	30	36	29	3	2
Pleasant working conditions	1	1	13	10	53	42	58	46	1	1
Quality and quantity of resources	8	6	18	14	58	46	40	32	2	2
Leadership opportunities	11	9	31	25	56	44	24	19	4	3
Perception of job security	11	9	13	10	46	37	52	41	4	3
Potential for salary increases	6	5	18	14	48	38	49	39	5	4
Other	1	1	0	0	1	1	6	5	118	94

Note. Percentages do not total 100% due to rounding.

9. What is your likelihood of continuing in the teaching profession? (Check only one.)

Table 9

Likelihood of Continuing in the Teaching Profession

Plans to Continue Teaching	*f*	%
I definitely plan to continue teaching as a long-term career (8 or more years)	68	54
I probably will continue teaching at least for a while (3 to 7 years)	32	25
I am actively considering a non-teaching job	6	5
I definitely plan to leave the teaching profession within a year or 2	6	5
I plan to retire	8	6
I am no longer teaching	3	2
Non-Response	3	2

Note. Percentages do not total 100% due to rounding.

10. Age

Table 10

Age

Age	*f*	%
Under 30	15	12
30–40	37	29
41–50	42	33
51–60	31	25
61–70	1	1
Over 70	0	0

11. Gender

Table 11

Gender

Gender	*f*	%
Male	86	68
Female	46	32

12. Mark all levels of education you have completed.

Table 12

Levels of Education Completed

Degrees	*f*	%
Doctorate	1	1
Educational specialist	1	1
Master's	36	29
Bachelor's	95	75
Associate degree	38	30
Other	14	11

Note. Percentages do not total 100% due to multiple responses for more than one level of education completed.

13. Ethnicity (Check all that apply.)

Table 13

Ethnicity

Ethnicity	*f*	%
White, Non-Hispanic	107	85
Black, Non-Hispanic	4	3
Hispanic	3	2
Native American	2	2
Asian/Pacific Islander	2	2
Other	5	4

Note. Percentages do not total 100% due to multiple responses for more than one type of ethnicity.

Appendix XVI

Trade and Industrial Certification Survey Responses $N = 157$

1. At the time you began teaching, had you completed all the requirements for teacher certification?

Table 1

Completed Certification Requirements

	f	%
Yes	62	39
No	93	59
Non-Response	2	1

If no, have you completed the requirements since you were hired?

Requirements Have Since Been Completed ($N = 93$)

	f	%
Yes	64	69
No	25	27
Non-Response	4	4

2. Which of the following best describes your teacher certification program? (Check only one.)

Table 2

Teacher Certification Program

Type of Program	*f*	%
Baccalaureate degree in education that leads to certification	48	31
Fifth-year or post-baccalaureate program that leads to certification	22	14
Alternative certification (non-traditional)	73	46
Other	6	4
Non-Response	7	4

Note. Percentages do not total 100% due to rounding or non-responses.

3. Are you currently teaching?

Table 3

Teaching Status

	f	%
Yes, I am currently teaching	151	96
No, I have left the teaching profession	1	1
No, I did not enter the teaching profession	2	1
Non-Response	3	2

4. Looking back to your first 6 months of teaching, how adequate was your pre–service preparation in each of the following areas?

Table 4

Pre-Service Preparation

Areas of Pre-Service Preparation	Not Adequate		Somewhat Adequate		Moderately Adequate		Very Adequate		Not Adequate	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Pedagogy or teaching methods	23	15	49	31	60	38	21	13	4	3
Knowledge of subject matter	5	3	5	3	37	24	106	68	4	3
Classroom management skills	19	12	56	36	54	34	24	15	4	3
Strategies for working with special populations	39	25	56	36	43	27	16	10	3	2

Note. Percentages do not total 100% due to rounding.

5. Which of the following was provided to you as a beginning teacher? (Mark all that apply.)

Table 5

Support Provided as a Beginning Teacher

Types of Support	*f*	%
Professional development plan	64	41
Support from a professional development coordinator	49	31
Professional development resource center	38	24
Professional development workshops	86	55
Orientation to the career and technical education student organizations in my teaching area	45	29
Coaching in reflection	34	22
None of the above	33	21
Other	15	10

Note. Percentages do not total 100% due multiple responses for support in more than one area.

6. To what extent did you use the following types of support prior to or during your first 6 months of teaching?

Table 6

Support Services Used During First Six Months of Teaching

Support Services Used	Not Available		Available Did Not Use		Available Used Some Degree		Available Used Significant Degree		Non-Response	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Teacher handbook	34	22	31	20	57	36	30	19	5	3
Curriculum and instructional resources	23	15	29	18	51	32	47	30	7	4
Mentor	47	30	28	18	37	24	41	26	4	3
Peer support group	61	39	35	22	33	21	22	14	6	4
Orientation to school's policies and procedures	30	19	38	24	63	40	20	13	6	4
Paid curriculum development time prior to teaching	110	70	12	8	19	12	7	4	9	6
On-site certification courses	110	70	14	9	17	11	10	6	6	4
Tuition assistance for certification courses	92	59	14	9	15	10	29	18	7	4

Note. Percentages do not total 100% due to rounding.

7. How would you rate your teaching experience so far?

Table 7

Rating of Teaching Experience

Rating	*f*	%
Extremely positive	40	25
Very positive	59	38
Positive	38	24
Somewhat positive	14	9
Not at all positive	2	1
Non-Response	4	3

8. How important is/was each of the following in determining your intentions to continue or not continue teaching?

Table 8

Rating of Intentions to Continue or Not Continue Teaching

Rating	Not Important		Somewhat Important		Moderately Important		Very Important		Not Important	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%
Positive teaching experience	3	2	11	7	49	31	91	58	3	2
Professional development opportunities	17	11	41	26	59	38	37	24	3	2
Business and community internship opportunities	53	34	51	32	30	19	19	12	4	3
Sense of accomplishment	2	1	11	7	38	24	103	66	3	2
Availability of mentoring program	54	34	44	28	30	19	25	16	4	3
Availability of support services for new teachers	44	28	49	31	33	21	26	17	5	3
Recognition and support from supervisor	14	9	26	17	53	34	60	38	4	3
Recognition and support from peers	12	8	26	17	67	43	49	31	3	2
Positive interactions with students	1	1	6	4	50	32	98	62	2	1
Approval of family and/or friends	19	12	37	24	59	38	39	25	3	2
Pleasant working conditions	2	1	16	10	70	45	67	43	2	1
Quality and quantity of resources	8	5	23	15	71	45	50	32	5	3
Leadership opportunities	18	11	45	29	65	41	25	16	4	3
Perception of job security	15	10	31	20	56	36	51	32	4	3
Potential for salary increases	9	6	29	18	52	33	61	39	6	4
Other	3	2	0	0	0	0	11	7	143	9

Note. Percentages do not total 100% due to rounding.

9. What is your likelihood of continuing in the teaching profession? (Check only one.)

Table 9

Likelihood of Continuing in the Teaching Profession

Plans to Continue Teaching	*f*	%
I definitely plan to continue teaching as a long-term career (8 or more years)	92	59
I probably will continue teaching at least for a while (3 to 7 years)	42	27
I am actively considering a non-teaching job	5	3
I definitely plan to leave the teaching profession within a year or 2	6	4
I plan to retire	6	4
I am no longer teaching	1	1
Non-Response	5	3

Note. Percentages do not total 100% due to rounding.

10. Age

Table 10

Age

Age	*f*	%
Under 30	11	7
30–40	48	31
41–50	53	34
51–60	41	26
61–70	3	2
Over 70	0	0
Non-Response	1	1

Note. Percentages do not total 100% due to rounding.

11. Gender

Table 11

Gender

Gender	*f*	%
Male	131	83
Female	22	4
Non-Response	4	3

12. Mark all levels of education you have completed.

Table 12

Levels of Education Completed

Degrees	*f*	%
Doctorate	1	1
Educational specialist	5	3
Master's	41	26
Bachelor's	88	56
Associate degree	39	25
Other	26	17

Note. Percentages do not total 100% due to multiple responses for more than one level of education completed.

13. Ethnicity (Check all that apply.)

Table 13

Ethnicity

Ethnicity	*f*	%
White, Non-Hispanic	134	85
Black, Non-Hispanic	7	4
Hispanic	4	3
Native American	0	0
Asian/Pacific Islander	1	1
Other	6	4

Note. Percentages do not total 100% due to multiple responses for ethnicity.

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